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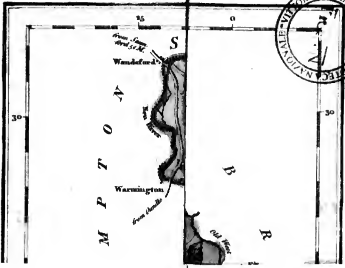

BIBLIOTECA NAZIONALE VITTORIO EMANUELE III

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GENERAL VIEW

OF THE

AGRICULTURE

OF THE

COUNTY OF HUNTINGDON;

DRAWN UP FOR THE

CONSIDERATION OF THE BOARD OF AGRICULTURE

AND INTERNAL IMPROVEMENT.

Napoli

BY R. PARKINSON.

VITTORIO EMANUELE III - BIBLIOTECA NAZIONALE
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HUNTINGDONSHIRE.

CHAP. I.

GEOGRAPHICAL STATE AND CIRCUMSTANCES.

SECT. I.—SITUATION AND EXTENT.

THIS county takes its name from Huntingdon, the principal town, which name is derived from a Saxon word, signifying *Hunter's down*, this district being in their times well adapted for the sport of hunting, as it was almost one continued forest, till it was deforested by the kings Henry II. III. and Edward I. the latter of whom left no more forest than what belonged to the crown.* The county is surrounded by Northamptonshire on the north, north-west and west; Bedfordshire on the south and south-west; and by Cambridgeshire on the east, south-east and north-east. It contains about one hundred and ninety-four thousand nine hundred and fifty acres; the land, according to the best information I could obtain in each parish, is nearly in the state which the following table exhibits.

---

* Bowen's Geography, Vol. I. p. 155.

Parishes	Arable	Meadow	Pasture	Commons	Heath	Fen-Lands	Waste	Plantations	Woods	Total
	A. R. P.	A. R. P.	A. R. P.	. R . R.	A. R. P.	A. R. P.	A. R. P.	A. R. P.	A. R. P.	A. R. P.
Abbotesley	1041 0 0	50 0 0	12 0 0	—	—	—	—	—	—	1109 0 0
Alconbury	1960 0 0	600 0 0	880 0 0	—	—	—	—	—	60 0 0	3500 0 0
Alwalton	935 0 0	40 0 0	25 0 0	—	—	—	—	—	—	1000 0 0
Barnham	250 0 0	69 0 0	231 0 0	—	—	—	—	—	—	550 0 0
Bluntisham	67 0 0	250 0 0	670 0 0	303 0 0	—	—	70 0 0	—	130 0 0	1490 0 0
Brampton	2850 0 0	500 0 0	150 0 0	—	—	—	—	—	—	3500 0 0
Brington	980 2 36	20 0 0	10 0 0	—	—	—	—	—	3 0 0	1013 2 36
Broughton	1108 0 0	200 0 0	150 0 0	—	—	—	—	—	—	1458 0 0
Buckden	2060 0 0	160 0 0	200 0 0	40 0 0	—	—	—	—	40 0 0	2500 0 0
Buckworth	500 0 0	250 0 0	1190 0 0	—	—	—	—	—	60 0 0	2000 0 0
Bury	600 0 0	100 0 0	150 0 0	—	—	150 0 0	—	—	—	1000 0 0
Bythorne	1182 0 0	150 0 0	150 0 0	—	—	—	—	—	18 0 0	1500 0 0
Catworth	1850 0 0	100 0 0	450 0 0	—	—	—	—	—	—	2400 0 0
Caldecot, &c.	691 0 0	330 0 0	639 0 0	—	—	—	250 0 0	—	70 0 0	1980 0 0
Chesterton	550 0 0	50 0 0	600 0 0	—	—	—	—	—	—	1200 0 0
Coln	524 0 0	80 0 0	220 0 0	—	160 0 0	200 0 0	—	—	16 0 0	1200 0 0
Conington	100 0 0	100 0 0	2796 0 0	—	—	500 0 0	—	4 0 0	—	3500 0 0
Covington	794 0 0	50 0 0	150 0 0	—	—	—	—	6 0 0	—	1000 0 0
Denton	951 1 29	70 0 0	20 0 0	—	—	—	—	—	—	1044 1 29
Doddington	800 0 0	250 0 0	350 0 0	—	—	—	—	—	75 0 0	1475 0 0
Easton	700 0 0	90 0 0	90 0 0	—	—	—	—	—	120 0 0	1000 0 0
Elton	1240 0 0	200 0 0	2500 0 0	—	—	—	—	—	60 0 0	4000 0 0
Ellington	1000 0 0	330 0 0	1226 0 0	—	—	—	—	—	90 0 0	2646 0 0
Everton	500 0 0	50 0 0	20 0 0	—	—	—	—	—	30 0 0	600 0 0
Eynsbury	1750 0 0	150 0 0	100 0 0	—	—	—	—	—	—	2000 0 0
Farcet	300 0 0	—	—	—	—	3000 0 0	70 0 0	—	—	3370 0 0

Fenny Stanton . .	1234 0 0	666 0 0	100 0 0	—	—	—	—	—	—	2000 0 0
Fletton	100 0 0	100 0 0	500 0 0	—	—	—	—	—	—	700 0 0
Folkesworth . .	829 0 0	40 0 0	120 0 0	—	—	—	—	—	11 0 0	1000 0 0
Gidding Magna . .	1850 0 0	100 0 0	50 0 0	—	—	—	—	—	—	2000 0 0
Ditto Parva . .	370 0 0	100 0 0	130 0 0	—	—	—	—	—	—	600 0 0
Glatton	1889 1 22	100 0 0	80 0 0	—	—	—	—	3 0 0	—	2072 1 22
Godmanchester .	3720 0 0	200 0 0	80 0 0	—	—	—	—	—	—	4000 0 0
Gravley	1740 0 0	30 0 0	30 0 0	—	—	—	—	—	—	1800 0 0
Grafham . . .	660 0 0	187 0 0	633 0 0	—	—	—	—	—	20 0 0	1500 0 0
Gransdon	1829 0 0	140 0 0	15 0 0	—	—	—	—	—	16 0 0	2000 0 0
Haddon	804 0 0	80 0 0	240 0 0	—	—	—	—	—	10 0 0	1134 0 0
Haile Weston . .	423 2 0	300 0 0	400 0 0	—	—	—	5 0 0	1 2 0	270 0 0	1400 0 0
Hamerton . . .	400 0 0	150 0 0	1400 0 0	—	—	—	—	—	50 0 0	2000 0 0
Hartford	1124 2 23	250 0 0	100 0 0	—	—	—	—	—	—	1474 2 23
Hemingford Grey .	1234 0 0	666 0 0	100 0 0	—	—	—	—	—	—	2000 0 0
Ditto Abbots . .	1500 0 0	100 0 0	400 0 0	—	—	—	—	—	—	2000 0 0
Hilton	999 0 0	50 0 0	—	—	—	—	—	—	1 0 0	1050 0 0
Holme	1741 3 0	150 0 0	2000 0 0	—	—	—	300 0 0	—	50 0 0	4241 3 0
Houghton . . .	1760 0 0	90 0 0	150 0 0	—	—	—	—	—	—	2000 0 0
Huntingdon . .	—	100 0 0	100 0 0	200 0 0	—	—	—	—	—	400 0 0
Keystone . . .	486 0 0	300 0 0	1218 0 0	—	—	—	—	—	—	2004 0 0
Kimbolton . . .	3730 0 0	200 0 0	700 0 0	—	—	—	—	20 0 0	350 0 0	5000 0 0
Leighton Bromswld	2040 0 0	400 0 0	600 0 0	—	—	—	—	—	60 0 0	3100 0 0
Long Stow . . .	670 0 0	60 0 0	20 0 0	60 0 0	—	—	—	—	—	800 0 0
Luddington . .	840 0 0	40 0 0	20 0 0	100 0 0	—	—	—	—	—	1000 0 0
Lutton	890 0 0	70 0 0	300 0 0	40 0 0	—	—	—	—	—	1300 0 0
Midloe, extra Parochial . .	—	50 0 0	200 0 37	—	—	—	—	—	250 0 0	500 0 37
Carried forward .	58152 0 0	3698 0 0	22605 0 0	733 0 0	160 0 0	4850 0 0	318 0 0	45 0 0	1860 0 0	97107 0 27

Parishes	Arable			Meadow			Pasture			Commons			Heath			Fen-Land			Waste			Plantations			Woods			Total		
	A.	R.	P.	A.	R.	P.	A.	R.	P.	A.	R.	P.	A.	R.	P.	A.	R.	P.	A.	R.	P.	A.	R.	P.	A.	R.	P.	A.	R.	P.
Brought over	58152	0	0	3698	0	0	22605	0	9	733	0	0	160	0	0	4850	0	0	745	0	0	342	0	0	1860	0	0	97107	0	27
Molesworth	589	0	0	80	0	0	320	0	0	—			—			—			—			—			11	0	6	1000	0	0
Morborn	420	0	0	160	0	0	540	0	0	—			—			—			—			—			10	0	0	1130	0	0
Needingworth cum Holywell	5190	0	0	770	0	0	1540	0	0	—			—			—			—			—			—			7500	0	0
Olford Clung	700	0	0	100	0	0	200	0	0	—			—			—			—			—			—			1000	0	0
Olford D'Arcy	1000	0	0	400	0	0	400	0	0	—			—			—			—			—			—			1800	0	0
Old Hurst	800	0	0	80	0	0	100	0	0	—			—			—			—			—			20	0	0	1000	0	0
Old Weston	1700	0	0	100	0	0	100	0	0	—			—			—			85	0	0	—			15	0	0	2000	0	0
Overton Longville	500	0	0	300	0	0	920	0	0	—			—			—			—			—			80	0	0	1800	0	0
Ditto Watterville	860	0	0	100	0	0	40	0	0	—			—			—			—			—			—			1000	0	0
Papworth	824	0	0	70	0	0	30	0	0	—			—			—			—			—			16	0	0	940	0	0
Paxton Magna	870	0	0	80	0	0	20	0	0	30	0	0	—			—			—			—			—			1000	0	0
Ditto Parva	885	0	0	80	0	0	30	0	0	5	0	0	—			—			—			—			140	0	0	1140	0	0
Perry	330	0	0	120	0	0	120	0	0	—			—			—			30	0	0	—			—			600	0	0
Pidley	1790	0	0	300	0	0	270	0	0	—			—			—			—			—			500	0	0	2860	0	0
Ramsey	7500	0	0	1250	0	0	—			3750	0	0	—			—			—			—			—			12500	0	0
Ravley Magna	1140	0	0	60	0	0	60	0	0	—			—			—			20	0	0	—			—			1300	0	0
Ditto Parva	310	0	0	85	0	0	85	0	0	—			—			—			—			—			20	0	0	500	0	0
Ripton Abbots	800	0	0	1333	0	0	1352	0	0	—			—			—			15	0	0	—			500	0	0	4000	0	0
Ditto Regis	1080	0	0	20	0	0	100	0	0	—			—			—			—			—			—			1200	0	0
Sawtry St. Andrews	2500	0	0	200	0	0	100	0	0	—			—			—			—			—			200	0	0	3000	0	0
Sawtry St. Judith	1200	0	0	100	0	0	100	0	0	—			—			—			—			—			400	0	0	1800	0	0
Saint Neot's	2041	0	0	200	0	0	150	0	0	—			—			—			—			9	0	0	—			2400	0	0
Saint Ive's	1785	0	0	150	0	0	60	0	0	—			—			—			—			—			5	0	0	2000	0	0
Somersham	2100	0	0	369	0	0	300	0	0	—			—			—			—			16	0	0	15	0	0	2800	0	0
Southoe	1200	0	0	40	0	0	160	0	0	—			—			—			—			—			—			1400	0	0

Spaldwick . . .	680 0 0	170 0 0	600 0 0	—	—	—	—	—	—	1450 0 0
Standground . .	705 0 0	500 0 0	1610 0 0	—	—	—	—	—	—	2815 0 0
Stebbington . .	555 0 0	170 0 0	675 0 0	—	—	—	—	—	—	1400 0 0
Steeple Gidding .	400 0 0	130 0 0	470 0 0	—	—	—	—	—	—	1000 0 0
Stewkly Magna .	1400 0 0	300 0 0	300 0 0	—	—	—	—	—	—	2000 0 0
Stewkley Parva .	1000 0 0	260 0 0	600 0 0	—	—	—	—	—	—	1800 0 0
Stilton	800 0 0	100 0 0	100 0 0	—	—	100 0 0	—	—	—	1100 0 0
Stoughton . . .	860 0 0	40 0 0	100 0 0	—	—	—	—	—	—	1000 0 0
Swineshead . . .	500 0 0	100 0 0	50 0 0	100 0 0	—	—	—	—	150 0 0	900 0 0
Thurning . . .	565 0 0	20 0 0	15 0 0	—	—	—	10 0 0	—	—	600 0 0
Toseland	675 0 0	70 0 0	70 0 0	—	—	—	10 0 0	—	25 0 0	850 0 0
Upton	550 0 0	50 0 0	150 0 0	—	—	—	—	—	40 0 0	800 0 0
Upwood	924 0 0	280 0 0	80 0 0	200 0 0	—	—	—	—	16 0 0	1500 0 0
Warsley . . .	570 0 0	80 0 0	100 0 0	40 0 0	—	—	—	—	140 0 0	930 0 0
Warboys . . .	3368 0 0	1000 0 0	500 0 0	—	—	—	—	—	300 0 0	5168 0 0
Water Newton . .	275 0 0	150 0 0	415 0 0	—	—	—	—	10 0 0	—	850 0 0
Wistow	1820 0 0	60 0 0	40 0 0	—	—	—	—	—	80 0 0	2000 0 0
Winwich . . .	1540 0 0	60 0 0	100 0 0	—	—	—	—	—	—	1700 0 0
Witton	1645 0 0	55 0 0	100 0 0	—	—	—	—	—	—	1800 0 0
Woodstone . . .	840 0 0	80 0 0	80 0 0	—	—	—	—	—	—	1000 0 0
Wood Walton . .	467 0 0	467 0 0	936 0 0	—	—	—	300 0 0	—	30 0 0	2200 0 0
Wood Hurst . .	800 0 0	50 0 0	50 0 0	—	—	—	—	—	—	900 0 0
Wooley	300 0 0	450 0 0	250 0 0	—	—	—	—	—	—	1000 0 0
Yaxley	1600 0 0	100 0 0	300 0 0	—	—	1000 0 0	1000 0 0	—	—	4000 0 0
Yelling	1361 0 0	40 0 0	9 0 0	—	—	—	—	—	—	1410 0 0
Totals	120465 1 30	20227 0 0	37482 0 37	4858 0 0	160 0 0	4950 0 0	2165 0 0	69 2 0	4573 0 0	194950 0 27

There are two Lakes in this County, or as they are here termed *Meres*, which are included in the account of Fen and Waste Land.—The greater part of the Fens are under *the plough*, which it is proper here to mention, as it accounts for the small quantities denominated Fen-Land.

SECT. II.—DIVISIONS.

This county under the Saxon Heptarchy, lay in the kingdom of Mercia, or the Middle Angles. It lies in the Norfolk circuit, and its ecclesiastical government is in the province of Canterbury; and the diocese of Lincoln. The fenny part of it lies in the Bedford level. It is divided into four hundreds, namely;

Norman cross, towards the north.
Toseland, towards the south:
Hurstingstone, towards the east.
Leightonstone, towards the west.

It contains six market-towns and seventy nine parishes, the names of the principal towns, villages, and hamlets, are subjoined.

Alwalton
Alconbury
Abbotesley

Bury
Broughton
Bluntisham
Buckworth
Barham
Bythorne
Brington
Bromeswold
Brampton
Buckden

Caldecot
Chesterton
Connington
Coln
Catworth
Covington

Denton
Doddington

Elton
Earith
Easton
Ellington
Eynsbury

Fletton
Farcet
Folkesworth

Fennystanton

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Fennystanton
Filbrooke

Glatton
Gidding Magna
Steeple Gidding
Gratham
Godmanchester
Great Gransdon

Holme
Haddon
Hamerton
Old Hurst
Wood Hurst
Hartford
Houghton
Hemmingford
Holywell
Huntingdon
Hilton
Ha-le-Weston

St. Ives

Keystone
Kimbolton

Luddington
Leighton
Long-Stow

Morborn
Molesworth

Needingworth
St. Neot's

Overton-Longville
Overton-Waterville
Old Weston
Offord-Cluny
Offord-Darey

Pidley
Perry
Perenhall
Little Paxton
Great Paxton

Ramsay
Ripton-Abbots
Ripton-Regis
Great Raveley
Little Raveley

Somersham
Somersham Fen-farms
Sawtry
Stewkley Parva
Stewkley Magna
Sibson
Stilton
Spaldwick
Swinshead
Stoughton Great
Stoughton Parva
South-hoe

Thurning
Toseland

Upwood
Upton

Warboys
Warboys Fen-farms
Winwick
Wood Walton
Weston

Wooley
Witton
Water-Newton
Wood-Stow
Woodstone
Whittlesea
Wistow
Waresley

Yaxley
Yaxley Barracks
Yelling

It is remarkable that this county and Cambridgeshire are joined together under one civil administration; there being but one high sheriff for both, who is alternately chosen one year out of Cambridgeshire, the second out of the Isle of Ely, and the third out of this county.

This county sends four members to parliament; two for the county, and two for the town of Huntingdon; and is one of the seven counties, namely, Bedford, Huntingdon, Bucks, Berks, Hertford, Essex, and Suffolk, that are contiguous without a city.

SECT. III.—CLIMATE.

The climate on the whole is tolerably healthy, considering that all the east or north-east part of the county is skirted by fens, and that but a small part of it is well supplied with water from springs: indeed to all my inquiries with respect to the healthiness of the climate, except in one instance, the parishes were represented as being healthy, and this one was said to be unhealthy on account of the badness of the water, especially in the summer season.*

SECT. IV.—SOIL.

THIS county possesses several distinct sorts of soil, as will be seen in the following account, the number of acres of each, in each of the parishes, being computed as nearly as possible.

ABBOTESLEY. 1103 acres of poor clay.

---

* On this subject, Mr. Scott observes, that the air of this county, varies perhaps as much as any district in the nation of the same size, the highland parts being very salubrious; but the fenny parts, through the broad shallow stagnating meres, and bad state of draining, impregnating the air at times, with immense quantities of putrifying effluvia, used to be as unhealthful as perhaps any part of Great Britain. And from this cause the inhabitants were frequently afflicted with agues, and fevers; particularly strangers who were not natives of the fens, to whom these complaints frequently proved mortal; especially if they were in low circumstances. But the county is now, through the great improvements in draining the fenny parts, tolerably healthful in general, and improves almost annually. Mr. Maxwell observed fourteen years ago, that "the climate on the whole is pretty healthy, considering that all the east or north-east part of the county is skirted by the fens, and that but a small part of it is well supplied with water, either from springs or rivers."

ALCONBURY cum WABRIDGE.	750 acres of strong clay, 875 woodland, and 875 gravel.
ALWALTON.	500 acres good loam, 250 cold clay, 250 gravel and good turnip land.
BARHAM.	550 acres of cold clay.
BLUNTISHAM cum EARITH.	994 acres of heavy clay, and 496 red light gravel of good quality.
BRAMPTON.	2332 acres of tolerably good sand and gravel, 583 of good clay, 585 of poor clay.
BRINGTON.	507 acres of strong clay, 506 of gravel.
BROUGHTON.	1458 ditto of ditto.
BUCKDEN.	833 ditto of gravel, 1667 clay.
BUCKWORTH.	200 ditto of sand, 1800 clay.
BURY.	800 good black clay, 150 peat.
BYTHORNE.	750 good strong clay, 750 pretty good woodland.
CATWORTH.	2400 acres of strong clay.
CALDECOT cum WASHINGLEY.	1489 acres of poor woodland.
CHESTERTON.	600 acres of strong clay, 50 of loam, 550 scaly land.
COLN.	400 acres of sharp soil, 400 clay, 400 heavy loam.
CONINGTON.	2623 acres of very good strong clay, 877 of baggy soil.
COVINGTON.	1000 acres of strong clay.
DENTON.	914 acres of strong heavy clay, 130 of gravel.
DODDINGTON.	700 acres of strong clay, 700 gravel.

EASTON.

EASTON.	500 acres of strong clay, 500 woodland.
ELTON.	250 acres gravel, good turnip land, 300 strong clay, and 3450 poor weak clay.
ELLINGTON.	1985 acres of stiff clay, 661 woodland.
EVERTON cum TETWORTH.	700 acres of poor clay.
EYNSBURY.	500 acres of sand, 1500 clay.
FARCET.	250 gravel and sand, 50 clay, and 3000 fen-land.
FENNY STANTON.	1200 acres of strong clay, 400 sand, 400 loam.
FLETTON.	650 acres of strong loam, 50 gravel.
FOLKESWORTH.	750 ditto good clay, 250 black clay.
GIDDING MAGNA.	2000 acres of poor strong clay.
GIDDING PARVA.	570 ditto light poor clay, 20 clay, 10 gravel.
GLATTON.	The whole of the parish a good strong clay.
GODMANCHESTER.	2667 acres of clay, 1333 sand and gravel.
GRAVLEY.	1800 acres of cold clay.
GRASHAM.	750 ditto of strong clay, 750 woodland.
GRANSDOM MAGNA.	The whole of it consists of a poor clay, mixed with small stones.
HADDON.	378 acres of very good strong clay, 378 red earth of a *kind* sort, 189 ditto of gravel, 189 black land.

HAILE

HAILE WESTON.	1400 acres of gravel and clay.
HAMERTON.	1750 ditto strong clay, 250 of gravel.
HARTFORD.	1106 ditto clay, 368 sand.
HEMINGFORD GREY.	1500 black gravel, 500 strong clay.
HEMINGFORD ABBOTS.	200 good gravel, 1800 strong clay.
HILTON.	840 acres of clay, 210 gravel.
HOLME.	2826 ditto of strong clay, 707 skirty land, 708 of fen.
HOUGHTON.	1500 ditto of ditto, 250 gravel, 250 woodland.
HUNTINGDON.	300 ditto of clay, 50 of loam, 50 gravel.
KEYSTONE.	2004 poor clay.
KIMBOLTON.	3332 of strong clay, 1668 woodland clay.
LEIGHTON BROMESWOLD.	All of a strong clay.
LONG STOW	Ditto ditto.
LUDDINGTON.	500 acres of strong clay, 500 woodland.
LUTTON.	All consisting of a strong clay.
MOLESWORTH.	500 acres of a strong clay, 500 woodland.
MORBORN.	All of a strong clay.
NEEDINGWORTH cum HOLYWELL.	5550 acres of strong clay, 437 gravel, 1513 black gravel.
OFFORD-CLUNY.	333 acres weak gravel, 333 strong clay, 334 gravel.
OFFORD-DARCY.	400 ditto, strong clay, 100 turnip land, 500 light clay, 800 acres being (enclosed) of *pretty* good clay.

Old Hurst.	The whole consisting of a poor strong clay.
Old Weston.	1400 acres light clay, 600 woodland.
Overton Longville.	900 acres of gravel, 450 clay and sand, 450 black loam.
——— Waterville.	166 ditto of ditto, 332 strong clay, 502 red furze land.
Papworth.	The whole parish of a thin stapled clay.
Paxton Magna.	900 acres of poor light clay, 100 clay of a rather better kind.
Paxton Parva.	570 ditto gravel, 285 loam, 147 clay, 138 woodland.
Perry.	300 acres of strong clay, 300 light clay.
Pidley.	550 ditto fen, 2010 stiff clay, 300 heath.
Ramsey.	7500 strong clay, 5000 fen and *pretty good.*
Ravley Magna.	1000 acres strong clay, 300 acres gravel.
——— Parva.	All of a strong clay.
Ripton Abbots.	2670 acres strong clay, 1330 woodland.
——— Regis.	All of a strong cold clay.
Sawtry St. Andrew's.	1500 acres of strong clay, 1500 of woodland.
——— St. Judith's.	900 ditto ditto 900 woodland
St. Neots.	300 acres of sandy, 2100 loam.
St. Ives.	All of a strong clay.
Somersham.	1000 acres clay, 200 gravel, 200 sandy, 1400 fenny.

SOUTHOE.	700 acres white clay, 233 sandy, 233 gravel, 234 loam.
SPALDWICK.	700 acres gravel and clay, 100 woodland, 650 poor thin clay.
STANDGROUND.	1100 deep loam, 1271 black gravel, 444 fenny.
STEBINGTON with SIBSON.	All of a gravel.
STEEPLE GIDDING.	Consists of a strong clay.
STEWKLY MAGNA.	1800 acres of strong clay, 200 of gravel.
——— PARVA.	1350 acres of clay, 450 gravel.
STILTON.	1000 acres of clay, 100 fenny.
STOUGHTONS.	950 acres of strong clay, 50 black gravel.
SWINESHEAD.	600 ditto ditto 300 loam.
THURNING.	All a poor clay.
TOSELAND.	600 acres of poor clay, 250 woodland.
UPTON.	All a strong clay.
UPWOOD.	1300 acres of strong clay, 200 of black land.
WARSLEY.	800 acres of poor strong clay, 130 sandy.
WARBOYS.	2168 acres of strong clay, 3000 fenny.
WATER NEWTON.	212 acres of good turnip land, 425 good strong clay, 213 acres of clay mixed with stones.
WESTON.	1000 acres of strong clay, 1000 fenny.
WINWICK.	100 acres gravel, 1000 strong clay, 600 woodland.

WITTON.

WITTON.	1200 acres clay land, 300 gravel, 300 light land bearing furze.
WOODSTONE.	333 acres gravel and sand, 600 strong clay, 67 woodland.
WOOD WALTON.	The whole consists of *gault*, or strong clay.
WOOD HURST.	800 acres strong clay, 100 turnip land.
WOOLEY.	500 ditto 500 woodland.
YAXLEY.	1000 ditto 1000 fenny.
YELLING.	The whole parish is of a poor clay.*

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* On the subject of soils, Mr. Scott observes that there are in nature perhaps, only two simple uncompounded natural earths or soils,—Sands of different kinds, and clays of various colours and qualities. When any clays are mixed or compounded together with any sand; this mixture is, or may be called mixed soil, earth, or loam; and may also be named after the kind, that it partakes of the greatest proportion; as sandy soil, stony soil, rocky soil, clayey soil, chalky soil, moory soil, sea deposit, fen soil, or decayed vegetable soil; (perhaps the best soil, the earth's rich round contains). And several of these soils are often mixed with various proportions of each, which cause their qualities and colours to vary very much from each other. Soils are best when mixed with proper proportions of clay and sand, and vegetable matter or mud; and they improve in value as they increase in thickness, and mend in quality, according to the temperature of the climate. They are further improved, if their level or inclination causes them to receive only a proper proportion, or quantity of solar rays. And the soil and land are highly improved in excellency, if the substratum suits the soil; and is neither too clayey, compact, solid, or low to retain too much moisture, or cause the water to stagnate; nor too sandy, rocky,

SECT. V.—WATER.

Abbotesley, watered by ponds.
Alconbury, ditto.
Alwalton, supplied by springs.
Barham, by ponds.
Bluntisham cum Earith, by springs, and the river Ouse.
Brampton, by springs, and the River Ouse.
Brington, by springs.
Broughton, by a stream which takes its course hence to Ramsey.

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rocky, porous, or high, to let the rain water pass through too soon, or run off too fast.

When the soil is too sandy, light, or dry, or the climate too hot, it should be marled, or clayed; when it is too clayey, it should have sand, or light soils mixed with it; or have its surface burned, which will make the soil much lighter. When it is too wet, it should be drained; and when springy, it should be hollow-drained; or drained with open gutters or drains. The soils in this county are very various, even in most parishes; and are described by the judicious Mr. Maxwell, thus; "The county of Huntingdon possesses several distinct sorts of soil; viz. 1st, fens or moor; 2nd, skirty land; 3rd, meadow land; 4th, strong deep stapled soil, either consisting of clay, or of gravel with a mixture of loam; and 5th, thin stapled light clay."

There are scarcely any minerals except gravel and turf moor, at present discovered and noticed in the county of Huntingdon. Which greatly surprizes me, because the surface in this county in several places is very much like, and has several symptoms exactly similar to the surface of Staffordshire, where mines are found; and are now wrought to the infinite advantage of the public. Indeed I think that there are other mines to be found in the county of Huntingdon, and several other adjacent counties, where they have never yet been properly sought for. I have often thought when riding over Somersham heath, and examining the surface, &c. that there is a coal mine under it, in that part of it towards St. Ive's.

Buckden, by good springs.
Buckworth, by springs.
Bury, is supplied by a small brook.
Bythorn, by springs.
Catworth, by ponds.
Caldecot cum Washingley, by ponds.
Chesterton, by ponds.
Coln, is supplied by springs.
Connington, by ponds.
Covington, by ponds.
Denton, by ponds.
Doddington, by springs.
Easton, partly by springs and ponds.
Elton, ditto ditto ditto.
Ellington, by ponds.
Everton cum Tetworth, by ponds.
Eynsbury, by the Ouse and springs.
Farcet, by springs.
Fenny Stanton, by very fine springs.
Fletton, by ponds and springs.
Folkesworth, by ponds.
Gidding Magna and Parva, by ponds.
Glatton, by ponds.
Godmanchester, by the Ouse and springs.
Graveley, by ponds.
Graffham, by ponds.
Gransdon, by ponds and springs.
Haddon, by ponds.
Haile Weston, by springs, and a small river which is never dry.
Hamerton, by ponds.
Hartford, by springs.
Hemingford Grey, by springs.
Hemingford Abbots, by springs and the Ouse.
Hilton, by springs.
Holme, by ponds.
Houghton, by springs.
Huntingdon, by springs.
Keystone, is supplied by fine springs in the town, and by ponds in the fields.

Kimbolton, by ponds and a few springs

Leighton Bromeswold, by ponds.

Long Stow, by ponds.

Luddington, by ponds.

Lutton, by ponds.

Molesworth, by springs in its lower parts, and ponds in the upper.

Morborn, by ponds.

Needingworth cum Holywell, by excellent springs.

Offord Cluny, by springs and the Ouse.

Offord-D'Arcy, by ditto ditto.

Old Hurst, by ponds and wells not fed by springs.

Old Weston, by springs.

Overton Longville, by springs.

Overton Waterville, by springs.

Papworth, by ponds.

Paxton Magna, by the Ouse, but no springs.

Paxton Parva, by the Ouse, springs and rivulets.

Perry, by ponds.

Pidley, by ponds and wells.

Ramsey, a canal navigable to Lynn, and springs.

Raveley Magna, by ponds.

Raveley Parva, by ponds.

Rippon Abbots, by springs in part, but chiefly by ponds.

Rippon Regis, by ponds.

Sawtry St. Andrews and Judith, by ponds.

St. Neot's, river Ouse, and by springs.

St. Ives, is supplied by very good springs.

Somersham, ditto.

Southoe, by ponds and springs.

Spaldwick, springs in the town.

Standground, by ponds.

Stebbington with Sibson, by springs.

Steeple Gidding, by ponds.

Stewkley Magna, by springs in the fields, but has none in the town.

Stewkley Parva, by ponds chiefly.

Stilton, has only one spring.

Stoughton Magna, by ponds.

Swineshead,

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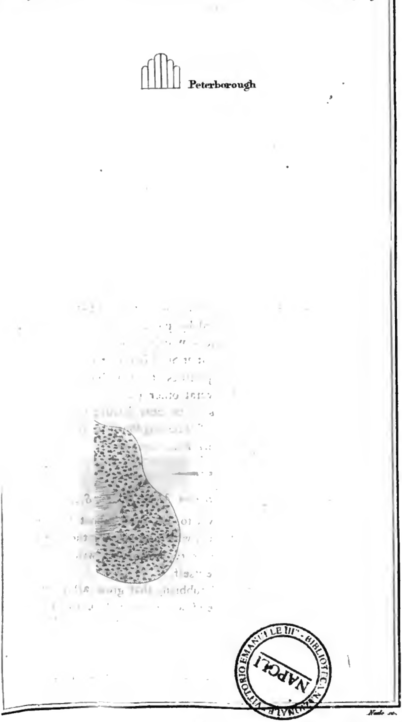
Huntingdonshire *to face Page 19*



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Swineshead, by ponds.
Thurmington, by ponds.
Toseland, by ponds.
Upton, by ponds.
Upwood, is supplied by ponds.
Warsley, by wells and land springs.
Warboys, by ponds, canal to Lynn.
Water Newton, by springs.
Wistow, by a small brook and ponds.
Winwick, by ponds.
Witton, by good springs.
Woodston, by good springs.
Wood Walton, by ponds.
Woodhurst, by springs.
Wooley, by pond.
Yaxley, by ponds.
Yelling, by ponds.

By the above account it may be seen that the greater part of the county is watered by ponds. The Ouse and the Nene are the only rivers which communicate with it; the former falling into it at St. Neot's, from whence it winds through several parishes to Huntingdon, and from that place through several other parishes into Cambridgeshire, which it enters at or near Erith; the latter divides the northern part of Huntingdonshire from the county of Northampton. *See Plate annexed.*

On the Drainage of Whittlesea Mere, by Mr. Scott.

AAA, Plan of a new river to be made about twenty feet wide, and four feet deep, which by carrying the Nene and other waters, into the forty feet river, will drain the greatest part of the mere itself.

BB, Reeds and aquatic rubbish, that grow all round the sides of the mere, some of which is lately cultivated.

CC,

CC, Dikes across the lowest parts of the mere, to convey the remaining water to the water engine, or mill.

D, The water engine or mill to throw the water out of the mere into the adjoining drain, from whence it will run into the forty feet river.

When I examined the depth of the mere in several places out of a boat, the water was not above eighteen inches, or two feet deep; and the person that rowed me about, who I think was a native of the house where the boats are kept, assured me that the mere was very little deeper of water in any part at that time. As it is so very shallow, it might be made almost dry land, by only cutting the small river to convey the water of the Nene round the highland side to the drain that will convey it down to the forty feet river by Lynn to the sea. This new little river also will catch all the other waters, that run from all the highlands into the mere. And as there are seldom or never any springs in the low fens, it is probable there are very few, if any in this mere; a small-sized water engine therefore, at a moderate expense, will be quite sufficient to drain the whole. And as the land is turf moor, the expense of cutting the little river, and all the draining and partitioning dikes, cannot be considerable, more especially as the turf will sell to great advantage.

Whittlesea, and the other meres are now so much filled up with mud, and grown up with aquatic matter, that they are of but very little value as fisheries, either to the proprietors or the public. And though they produce a little reed, which may bring a few pounds per annum to the proprietors, and are of some use to the public to thatch out-buildings with, yet as that exposes the villages, where they use it to thatch houses, &c. to such dreadful danger when a fire takes place, (as I have seen in many late fires), that upon the whole I think it would be good policy in the land owners to discourage thatching so much with reed or straw, either in towns or villages; especially where the houses and buildings stand near each other.

That the draining of the meres would be of great service to many thousands of acres round about them, is undeniable; for the meres are dreadful nuisances to the low fen lands that lie round about them, because in the winter season, they are kept always full of water by the rain and rivers, and mills, that work their water into them, and the waters that flow back up the rivers into them, when the rivers and sluices below them are silted up, and as they are situated in the high part of the fens, and surrounded with light porous fen-earth banks, that will let the waters through them almost as fast as a sieve. Indeed so little will the fen-earth resist or stop water, that it is a proverb among the fen farmers, that the banks will let as much water soak back through the banks in a night, as all the mills can throw into the river, even when the winds blow. And therefore, it must be self-evident, that those immense reservoirs, the meres, seated in the higher parts of the fens, must do almost incredible damage to all the circumjacent fen country. The new water-proof banks, would help them, but these go on slowly; as there are so many legal obstacles to prevent their adoption.

The drainage of the meres would also be of more service to the health of the inhabitants of this rich fertile soil, than any other measure that can possibly be adopted, for in their present state at some seasons, the meres are awful reservoirs of stagnated water, which poisons the circumambient air for many miles round about, and sickens and frequently destroys many of the inhabitants, especially such as are not natives. And the draining of these meres would be of immense advantage also to improve the drainage of all the countries, that drain through the outfall of Lynn; and the navigation of all the numerous places that navigate to and from that ancient port; because the fresh-water floods, the only natural efficient cause that can now effectually cleanse the rivers, would then flow down them with such great velocity, that they would sweep the sand and mud before them to deep water at sea; and thus amazingly cleanse all the rivers sea-ward, deeper and wider, and improve the outfall. A good outfall, all judicious engineers agree, and good authors, ancient and modern, that have written on fen drainage affirm, (see Dugsdale, Badslade, Lord Gorges, Armstrong, Bridgman, and Elstobb, Wattie, Maxwell, Vancouver, &c. &c.) is the chief and almost only thing wanting, effectually to drain the fertile fens, which lie many yards higher than low water mark at sea. And consequently if the outfalls were made good, the fens would drain themselves, and make this rich-soiled district the most valuable part of the kingdom.

Whittlesea mere is a very large piece of water. Mr. Bodger states it to be only 1570 acres, which may be true concerning the space of water it contains; now it is almost filled with mud, and grown up with reeds and rushes, and aquatic rubbish. But Camden and Bowen say it is six miles long, and three broad; which I apprehend is a fact, according to its ancient and proper boundaries.

As the necessary dikes also to part and drain the meres, will produce good turf, I am persuaded that the meres may be drained and enclosed for much less expense than most high country commons can be enclosed for. And certainly fen-land, when well drained and enclosed, is of double or triple value, to most highland commons. The meres when drained would make excellent hemp-land.

Ramsey mere, Ugg mere, and the other meres may also be drained in a similar way, and will make most excellent land for hemp, or rich land for wheat, or any other grain for many years; and afterwards as fine grazing or mowing land as any in the island. The draining of the meres therefore is an object of the greatest importance to the proprietors, an agricultural acquisition of the first magnitude, and an improvement of unspeakable value to the whole nation.

Here I will venture to observe, that water engines in this and in many other places would be much better worked with steam, than wind; because wind engines are dependant on the elements, and can only be worked when the wind blows; but steam water-engines may be worked at any time. And as they may be worked in fen-drainage with turf, the expense of working a steam-water engine in the fens with turf can be but very little, where all the surrounding surface is fen-moor. Indeed all this expense might be more than defrayed, by grinding corn, when they are not wanted to drain the land. And especially as the grain and flour, might be conveyed to them and from them by water.

CHAP. II.

STATE OF PROPERTY.

SECT. I.—ESTATES.

THE old enclosed part is said to be, generally speaking, in the hands of large proprietors; but property in the new enclosures and open-fields is much diffused. The following are the names of noblemen, gentlemen, &c. who own estates in this county.

Abbotsley—Francis Pym, Esq.

Alconbury—Duke of Manchester, Lord Gwydir, —— Booth, Esq. —— Bowles, Esq. and executors of late Mr. Newton.

Alwalton—Dean and Chapter of Peterborough, Earl Fizwilliam, Col. Bedford, Sir Richard Hilley, and others.

Barham—Sir W. Watson, W. Ladds, Esq. Joseph Sharpe, Esq. Henry Hansen, Esq. Sir Thomas Read, and some small proprietors.

Bluntesham—Mr. Tibbet, Alderman Annesley, and Messrs. Knight and Hutchinson.

Brampton—Lord Sandwich, Lord Sparrow, H. Rayston, and Robert Godby, Esqrs. Dr. Barnaby, Lord Hinchinbroke and Dr. Watson.

Brington—Mr. Lewin and Mr. Horsewith.

Broughton—W. Tatnall, Esq. L. Reynolds, Esq. and Charles Pinfold, Esq.

Buckden—Bishop of Lincoln, Mr. Reynolds, Mr. Thornhill, Mr. H. Whitworth, Mr. Margetts.

Buckworth—

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Buckworth—R. E. D. Shaftoe, Esq. —— Bury, Esq. Col. Sparrow, W. Campion, Esq. Messrs. Julian and Strafford.

Bythorne—Thos. Hunt, Esq. Mr. George, Wm. Walcott, Esq. Alderman Williams, Mr. Lucas, and others.

Catworth—Duke of Manchester, N. Tomlin, Esq. Mr. Fryer Geo. Maxwell, and C. Welstead, Esqrs. and others.

Caldecot—S. A. Priest, Esq. Duke of Buccleugh, —— Hainsley, Esq.

Chesterton—Earl of Aboyne.

Coln—Mr. Ketton, Mr. Sharpless.

Connington—John Heathcote, Esq.

Covington—Duke of Manchester, and —— Hawes, Esq.

Denton—General Wells, Rev. Mr. Moor, and Mr. John Nicholls.

Doddington—George Thornhill, Esq.

Easton—Sir W. Watson, —— Sparrow, Esq. W. Ladds, Esq. Duke of Manchester, and some others,

Elton—Lord Carysford, Thomas Cooper, Esq. Thomas Bates, Esq. Mrs. Selby, Rev. P. Fisher, and others.

Ellington— —— Sparrow, Esq. Sir W. Watson, R. Reynolds and W. Ladds, Esqrs. and others.

Everton—Miss Pedley.

Eynsbury—Lord Sandwich, —— Pym, Esq. M. P. Geo. Morgan, Esq. S. Staughton, Esq. Mr. Pattison, Mr. Howett, Rev. W. Cole, and others.

Farcet-Child—Geo. Maxwell, and —— Marshall, Esqrs. and others.

Fenny Stanton—Ald. John Brown, John Hammond, and John Alpress, Esqrs.

Fletton—Mr. Parker, Mr. Thompson, Mr. Squires.

Folkesworth—Messrs. Priest, Wright, Thornton, and Fryers, and others.

Gidding Magna—Lord Sondes.

Gidding Parva—A. Annesley, Esq.

Glatton—Admiral Wells, Mr. Sherwood, and others.

Godmanchester—Geo. Maule Sweetings, and John Pashley, Esqrs. Government and a number of small proprietors.

Gravely—Rev. W. Coppard, Geo. Thornhill, Esq. David Veasey, Edward Nightingale and W. Butt, Esqrs. and some small proprietors.

Graffham— —— Sparrow, Esq. and Dr. Parr.

Gransdon—Lord Ongley, James Rust, Esq. Major Kemple, Clare Hall College, John Spring, Esq. and others.

Haddon—Earl of Aboyne.

Haile Weston—John Pyne, Esq. A. M. Darrell, Esq. James Binsome, Esq. and Peter House College.

Hamerton—T. H. Barry, Esq. and Sir R. Hilley.

Hartford—L. M. Bourchier, Esq. and Lord Sandwich.

Hemingford Grey—R. C. Mitchell, Esq. Admiral Brown, Mr. W. Margetts, and Captain Hovendon.

Hemingford Abbots—R. C. Mitchell, Esq. Sir John Linton, Rev. John Perry.

Hilton—Walter Peek, Esq. Admiral Brown, Edward Theed, Esq. and Mr. Parnton.

Holme—Thomas Wells, —— Clarke, and —— Gee, Esqrs.

Holywell—Duke of Manchester, Mr. Ashton, Geo. Margetts, Esq. and Mr. Thorpe.

Houghton—Executors of Sir R. Bernard, Mr. Newton, Rev. Mr. Broad, and Alderman Annesley.

Huntingdon—Lord Sandwich and others.

Keystone—Duke of Manchester, — Bellamy, Esq. Geo. Palmer, Esq. Thomas Elderkin, Esq. —— Clitheroe, Esq. and others.

Kimbolton—Duke of Manchester, Alderman Williams.

Leighton Bromeswold—John Norris, Esq.

Long Stow—Prebend of Lincoln, —— Reed, R. Reynolds, T. N. Tomlins, Esqrs. and several others.

Luddington—Duke of Buccleugh, and Rev. Gilbert Pyewell.

Lutton—Lord Sondes, Sir R. Hilley, and Lady Booth.

Molesworth—Mr. Hustward, Samuel Pashley, Esq. Thomas Pashley, Esq. Messrs. Welstead, Shaw, Searle, Kington, Ord, and Titchmarsh hospital.

Morborn—Edward Shaftoe, Esq. and Rev. —— Attwood.

Needingsworth—Mr. John Hemingston, Thomas Howard, Esq. Mr. Britton, Dr. Waddington, Dr. Sturgess, Mr. Aynes and Geo. Margetts, Esq.

Offord Cluney—T. Sisney, Esq. and Dean and Chapter of Westminster.

Offord D'Arcy—Major Tyrrel, Hon. Mrs. Montague, James Morton, Esq. Mr. Peppercorn, and some others.

Old Hurst—Miss Fountain, General Morgan, and some small freeholders.

Old Weston—R. Reynolds, Esq. Mr. Boldero, Rev. Mr. Malone, Barnard Hospital, Mr. Fortescue, and others.

Overton Longville—Lord Aboyne, Rev. Charles Stuart, Dean and Chapter of Peterborough.

Overton Waterville—Lord Aboyne, Earl Fitzwilliam, Pembroke Hall College, and others.

Papworth—Mr. Grace.

Paxton Magna—— Leeds, Esq. Dean and Chapter of Lincoln, and others.

Paxton Parva—H. P. Stanley, Esq. R. Reynolds, Esq. St. John's and Catherine Hall Colleges, O. Rowley, Esq.

Perry—James Girth, Esq. —— Hurst, —— Browning, and —— Caswell, Esqrs. Sir James Duberry.

Pidley—Sir R. Burton, —— Cole and —— Cherry, Esqrs.

Ramsay—W. H. Fellowes, Richard Pooley, M. A. Strafford, B. Brightsey, Samuel Wells, Esqrs. and many others.

Raveley Magna—Sir Henry Peyton, Sir Richard Bickerton.

Raveley Parva—N. Wescomb, Esq. Mrs. Owen, Lord Sandwich, T. Pooley, Esq.

Ripton Abbots—John Roper and W. Fellowes, Esqrs.

Ripton Regis—Rev. S. Kentish, Master of Magdalen College, Rev. Dr. Sturgess, Rev. Dr. Torkington.

Sawtry St. Andrews—Duke of Devonshire, —— Annesley, Esq.

Sawtry St. Judith's—Duke of Devonshire, Lord Cavendish.

St. Neot's—Lord Sandwich, —— Rowley, Esq. Mr. Leighton, and Sir G. B. Smith.

St. Ive's—J. White, Esq. James and John Mann, John Brown, John Linsall, and Charles Gardiner, Esqrs.

Somersham—Messrs. Farmer, Ansell, Ibbott, Leeds, Iletf, Wilson, George Thompson, and the Bishop of Landaff.

Southoe—H. P. Stanley, Lord of the Manor, Mr. Pointer, and Thornhill, Esq.

Spaldwick—— Sparrow, Esq. W. Reed, Esq. Thomas Day, Esq. Sir William Watson, and others.

Standground—Earl Fitzwilliam, Lord Eardley, —— Thompson, and T. V. Warwick, Esqrs.

Stebington—Duke of Bedford, and W. Walker, Esq. lord of the Manor.

Steeple Gidding—John Heathcote, Esq.

Stewkley Magna—Dr. Torkington and John Heathcote, Esq.

Stewkley Parva—Lord Sandwich.

Stilton—A. Annesley, Esq. and others.

Stoughton—George Parker and W. Gregory, Esqrs. and others.

Swineshead—Duke of Manchester, and Mr. Day.

Thurning—Mr. George Hart, and Mr. Bartley.

Toseland—Joseph Leeds and Edward Lunn, Esqrs. and others.

Upton—John Heathcote, Esq.

Upwood—Lady Bickerton, John Pooley, Esq. and others.

Warsley—General Needham, Rev. —— Jackson, and others.

Warboys—Mr. Stroud, John Richards, and John Carstairs, Esq. lord of the Manor.

Water Newton—Edward Knipe, Esq.

Wistow—Captain Jackson and Mr. Sweeting.

Winwick—Duke of Buccleugh, Messrs. Martin and Hunt, and others.

Witton—Sir Robert Barnard, Executors of Rev. —— Perry, and Rev. Mr. Cole, and Dr. Peckham.

Woodstone— —— Thompson, —— Vaughan, —— Edwards, Esqrs. Rev. Mr. Binghurst.

Wood Walton—General Hussey, W. Fellowes and W. Pears, Esqrs. Mr. Jay.

Wood Hurst—John Carstairs, Esq. and Mr. Bull.

Wooley—H. Cockerill, Esq. Rev. —— Peacock.

Yaxley—Lord Carysfort, Mr. John Faux, Messrs. F. Martin, Squires, Child, and others.

Yelling—Joseph Leeds, Esq. Charity of Quakers, Charles Nightingale, Esq. and Mr. Ashcroft.

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SECT. II.—TENURES.

We shall next proceed to state the tenures by which the land in general is held.

Abbotesley—Copyhold, fine arbitrary.

Alconbury—Copyhold, fine certain, and some freeholds.

Alwalton—Copyhold, fine certain.

Barham—Copyhold, fine certain.

Bluntisham—Two-thirds copyhold, fine arbitrary, one-third freehold.

Brampton—Copyhold chiefly, but a little freehold.

Brington—Freehold.

Broughton—Copyhold, fine certain.

Buckden—Copyhold, fine certain.

Buckworth—Freehold.

Bury—Half freehold, and half copyhold.

Bythorne—Freehold.

Catworth—Principally freehold, remainder copyhold.

Caldecot—Freehold.

Chesterton—Freehold.

Coln—Chiefly copyhold, remainder freehold.

Conington—Freehold.

Covington—Freehold.

Denton and Doddington—Freehold.

Easton—Chiefly freehold, a small part copyhold, fine certain.

Elton—Chiefly freehold, remainder copyhold.

Ellington—Copyhold, fine certain, and a little freehold.

Everton—Freehold.

Eynsbury—Chiefly copyhold, fine certain, a small part freehold.

Farcet—One-half copyhold, and one-half freehold.

Fenny Stanton—Part copyhold, fine certain, a small part freehold.

Fletton—Copyhold and some freehold.

Folkesworth—Freehold.

Gidding Magna—Chiefly copyhold.

Gidding Parva—Freehold.

Glatton, Godmanchester, and Graffham—Freehold.

Gravely—Copyhold, fine arbitrary.

Gransdon—Copyhold, fine, arbitrary.

Haddon—Freehold.

Haile Weston—Chiefly freehold, rest copyhold.

Hamerton—Freehold.

Hartford—Chiefly copyhold, remainder freehold.

Hemingford Grey, and Abbots—Freehold.

Hilton—Copyhold, fine certain, and a little freehold.

Holme—Freehold.

Holywell—Two-thirds copyhold, one-third freehold.

Houghton—Copyhold, fine certain.

Huntingdon—Greatest part freehold, and some copyhold.

Keystone—Freehold.

Kimbolton—Two-thirds freehold, one-third copyhold, fine certain.

Leighton Bromeswold—Freehold.

Long-Stow—Copyhold, fine certain.

Luddington—Copyhold.

Lutton—Freehold.

Molesworth—Freehold.

Morborn—Copyhold.

Needingworth—Chiefly copyhold.

Offord Cluny—Copyhold, fine arbitrary, some freehold, and some leasehold.

Offord D'Arcy—Chiefly freehold, remainder copyhold.

Old Hurst—All copyhold but one estate.

Old Weston and Overton Longville—Freehold.

Overton Waterville—Leasehold.

Papworth—Freehold.

Paxton Magna—One-third freehold, two-thirds leasehold.

Perry—Two-thirds copyhold, fine arbitrary, one-third freehold.

Pidley—Copyhold.

Ramsey—Greatest part freehold, some copyhold, part fine arbitrary, and part fine certain.

Raveley Magna—Copyhold, fine arbitrary.

Raveley Parva—Copyhold, fine certain.

Ripton Abbots—Freehold.

Ripton Regis—Chiefly freehold, remainder copyhold.

Sawtry St. Andrews—Copyhold, fine arbitrary, a small part freehold.

Sawtry St. Judith's—Copyhold.

St Neot's—One-half free, and the other half copyhold.

St. Ive's—Copyhold, fine, arbitrary.

Somersham—All the fen-lands, freehold, and some of the uplands; remainder copyhold.

Southoe Three-fourths freehold, and one-fourth leasehold.

Spaldwick—Copyhold, fine certain, a little freehold.

Standground—Greater part free, remainder copyhold.

Stebbington and Steeple Gidding—Freehold.

Stewkley Magna—Three-fourths freehold, one-fourth leasehold.

Stukely Parva—Chiefly copyhold, rest freehold.

Stilton—Freehold.

Sloughton—Three-fourths freehold, and one-fourth leasehold.

Swineshead—Copyhold, fine certain.

Thurning—Freehold.

Toseland—All freehold, but one estate.

Upton—Freehold.

Upwood —Copyhold.

Warsley—Freehold.

Warboys—One-half free, and the other half copyhold.

Water Newton and Winwick—Freehold.

Wistow—Chiefly copyhold, rest freehold.

Witton—Copyhold.

Woodstone—Chiefly copyhold, remainder freehold.

Wood Walton—Freehold.

Wood Hurst—Chiefly copyhold, remainder freehold.

Wooley—Freehold.

Yaxley—Three-fifths free, and two-fifths copyhold.

Yelling—Chiefly copyhold, rest freehold.

Rather more than half the county is of a freehold tenure, the remainder, (with the exception of about one thirtieth part of the whole, which is leasehold) is copyhold.

CHAP. III.

BUILDINGS.

SECT. I.—HOUSES OF PROPRIETORS.

THE following is a list of the principal houses in the county:

Alwalton, Colonel Belford.
Bluntisham, Mr. Kent, Mr. Feary.
Brampton, —— Sparrow, Esq.
Buckden, Bishop of Lincoln.
Caldecot, A. Priest, Esq.
Chesterton, Earl of Aboyne.
Conington, John Heathcote, Esq.
Denton, Rev. —— Moore, Rectory.
Doddington, George Thornhill, Esq.
Elton, Lord Carysfort.
Everton, Miss Pedley.
Fenny Stanton, Admiral Brown, Mr. Hammond, John Alpress, Esq.
Godmanchester, John Pashley, Esq.
Graffham, —— Sparrow, Esq.
Haddon, the Parsonage.
Hemingford Grey, John Linton, Esq. Rev. John Perry.
Hilton, Mr. Theeds.
Holme, General Wells.
Huntingdon, Lord Sandwich.
Kimbolton, Duke of Manchester.
Offord D'Arcy, —— Montague, Esq. and the Hon. Mrs. Montague.

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Overton Longville, Earl of Aboyne.
Paxton Parva, A. Standley, Esq.
Perry, Sir John Dubury.
Ramsey, W. H. Fellowes, Esq.
Rippon Abbots, John Roper, Esq.
Sawtry St. Andrew's, the Rectory.
St. Neot's, ——— Rowley, Esq.
St. Ives, Taylor White, Esq.
Somersham, George Thompson, Esq.
Southoe, Rev. Mr. Pointer.
Stebbington, the Parsonage.
Stoughton, George Parker, Esq.
Thurning, the Parsonage.
Warsley, General Needham.
Water Newton, Parsonage-House.

SECT. II. III. IV.—FARM-HOUSES, REPAIRS, COTTAGES, &c.

The following Table will give a general view of the number of inhabited houses, when the survey was taken, and the manner in which they are repaired.

Parishes.	Farm Houses.	Dwelling Houses.	Cottages	Repairs by whom done.
Abbotsley	10	—	10	by the landlord.
Alconbury	8	—	100	by the tenant.
Alwalton	4	—	20	by the landlord.
Barham	6	—	10	by landlord and tenant conjointly.
Bluntisham	15	—	65	ditto ditto
Brampton	5	—	15	by the landlord.
Brington	6	—	6	by landlord and tenant conjointly.
Broughton	6	—	40	ditto ditto
Buckden	14	240	—	by landlord.
Buckworth	6	—	15	ditto
Bury	6	—	28	ditto
Bythorne	6	—	5	ditto
Catworth	8	—	40	ditto
Caldecot	5	—	10	ditto
Chesterton	3	—	5	by landlord and tenant conjointly.
Coln	12	—	50	by landlord.
Conington	5	—	13	ditto
Covington	5	—	14	ditto
Denton	1	—	10	ditto
Doddington	4	—	16	ditto
Easton	6	—	12	chiefly by landlord.
Elton	11	10	100	by landlord.
Ellington	12	—	40	part by landlord solely, and part by the tenantry.
Everton	5	—	14	by landlord.
Eynsbury	6	60	20	ditto
Farcet	4	—	12	by tenant.
Fenny Stanton	10	80	8	by landlord and tenant conjointly.
Fletton	2	—	14	by landlord.
Folkesworth	3	10	10	ditto
Gidding Magna	10	80	20	by tenant.
Gidding Parva	2	—	—	ditto
Glatton	9	40	20	chiefly by landlord.
Godmanchester	20	140	20	by landlord.
Graveley	5	—	5	part by landlord solely, and part by tenants solely.
Graffham	6	—	20	by landlord.
Gransdon	11	—	20	part by landlord solely, and part by tenant solely.
Haddon	3	—	11	by landlord and tenant conjointly.
Haile Weston	6	15	15	by tenant.
Hamerton	7	—	3	by landlord and tenant conjointly.
Hartford	4	25	15	by landlord.
Hemingford Grey	7	35	15	ditto
Carried over	284	735	986	

Parishes.	Farm Houses	Dwelling Houses.	Cottages.	Repairs by whom done.
Brought over	284	735	986	
Hemingford Abbots . .	7	16	10	part by landlord solely, part by tenant solely.
Hilton . . .	5	—	28	by landlord.
Holme . . .	6	10	10	ditto
Houghton . .	6	30	10	ditto
Huntingdon . .		1800	—	ditto
Keystone . .	7	—	2	ditto
Kimbolton . .	10	140	6	ditto
Leighton Bromeswold . . .	8	20	10	by tenant.
Long Stow . .	6	—	12	by landlord.
Luddington .	5	—	7	by tenant.
Lutton . . .	3	5	11	by the landlord on tenants first coming in after which by the tenant solely.
Molesworth . .	7	15	10	by landlord and tenant.
Morborn . .	4	—	10	by tenant.
Meedingworth cum Holywell	25	16	6	by landlord and tenant.
Offord Cluny .	5	30	10	by landlord.
Offord D'Arcy	5	12	10	ditto
Old Hurst . .	5	5	10	by ditto
Old Weston .	10	—	3	by tenants.
Overton Longville . . .	2	3	3	by landlord and tenant conjointly.
Overton Waterville . . .	6	30	10	by landlord and tenant.
Papworth . .	3	—	5	by ditto ditto
Paxton Magna	7	—	9	by landlord.
Paxton Parva	5	14	10	ditto
Perry . . .	5	—	4	ditto
Pidley . . .	6	30	15	ditto
Ramsey . .	80	50	30	chiefly by landlord.
Raveley Magna	6	10	10	by landlord.
Raveley Parva	4	—	5	by tenant.
Ripton Abbots .	18	—	16	by landlord.
Ripton Regis .	4	8	8	ditto
Sawtry St. Andrew	8	80	20	ditto
Sawtry St. Judith	7	—	4	ditto
St. Neot's . .	8	130	20	by landlord and tenant.
St. Ive's . . .	6	300	10	by landlord in general.
Somersham . .	40	80	120	ditto
Southoe . . .	2	20	8	ditto
Spaldwick . .	6	10	30	ditto
Standground .	5	80	10	ditto
Stebington . .	5	—	20	by landlord and tenant.
Steeple Gidding .	2	—	5	ditto ditto
Stewkley Magna	11	—	14	by tenant.
Stewkley Parva	6	20	20	ditto
Stilton . . .	2	40	9	by landlord and tenant.
Stoughton . .	8	—	4	by tenant.
Carried over	397	3739	1512	

Parishes.	Farm Houses	Dwelling Houses.	Cottages.	Repairs by whom done.
Brought over	397	3739	1562	
Swineshead . .	5	——	15	ditto
Thurning . .	4	——	6	ditto
Toseland . .	4	——	12	by the landlord.
Upton . . .	5	——	20	ditto
Upwood . .	8	50	10	by landlord and tenant.
Warsley . . .	5	——	18	by landlord.
Warboys . .	30	——	30	by landlord and tenant.
Water Newton	3	——	11	ditto ditto
Wistow . . .	8	25	15	by landlord.
Winwick . .	9	——	12	ditto
Witton . . .	5	15	15	by landlord and tenant.
Woodstone . .	14	——	14	ditto ditto
Wood Walton	6	——	20	by landlord.
Wood Hurst .	6	30	10	ditto
Wooley . .	4	——	4	ditto
Yaxley . . .	5	30	60	ditto
Yelling . . .	8	——	20	ditto*
Total	802	3889	1872	

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* Mr. Scott recommends it to landlords not to lay out in buildings and repairs, on old tenements any large sum in one year. And the tenant should always pay half the workman's wages for new buildings, and all the workman's wages for repairs; and always do the carriage of all the building materials gratis. This would render tenants in general not so desirous of unnecessary buildings, and more careful to preserve them from wanting expensive repairs, and would make them pay timely attention to little decays and small damages, which if neglected, often prove very injurious to the buildings, and ultimately extremely expensive to the landlords. Every tenant also should be required to plant twenty or more willows, or poplars, or fruit trees, at a proper distance; or half that number of oaks, or ashes, and fence or preserve them from stock, for every yard the new buildings are in length; and half that number for every yard of expensive repairs; and let the tenant choose the places with the landlord's or steward's consent, where such timber or fruit trees should be planted.

Such a plan would prevent tenants from teazing for unnecessary buildings or alterations. And such plantations of timber, or fruit-trees would amazingly increase the real value of estates; and prove an ample compensation for the expense of buildings and repairs, and be of but little expense to tenants.

The farm-houses are in many cases inconveniently situated for the occupation of the land, and of course whatever is produced must be had at an expense considerably beyond what would be necessary, in case the contiguity and convenience which generally attach themselves to enclosed farms, were established. By the account above given it will be seen that there are 6563 inhabited houses in the county; that in three-fifths of the parishes, the repairs are done by the landlord, in one-fifth of them by the landlords and tenants conjointly, and the remaining fifth by the landlords or tenants solely. In regard to cottages, Mr. Scott observes, that of late several fen-farmers who have recently purchased their farms, have erected comfortable cottages on their land, knowing it will be very convenient for themselves to have good labourers on their premises. They have also annexed good large gardens to them, and let them to labourers; and some of them keep their labourers a cow.

CHAP. IV.

OCCUPATION.

SECT. I. AND II.—SIZE OF FARMS, RENT.

THE size of the farms will be seen from the following table:

Parishes.	Size of Farms.	Rent per acre.
		s. d.
Abbotesley . .	from 100 acres to 110 acres	7 0 per acre
Alconbury cum Wabridge .	from 90 to 160 acres, and 400 to 600	17 0
Alwalton . .	from 70 to 200, 250, 260	14 0
Barnham . .	from 20 to 200	16 0
Bluntisham cum Erith . . .	from 20 to 157, and 160	16 0 to 40s. open field 25s. to 40s. enclosed
Brampton . .	30, 150, 300, and 400	26 0
Brington . . .	50, 141, to 300	22 0
Broughton . .	70, 350, to 400	12 0
Buckden . . .	100 to 250	18 0
Buckworth . .	100 to 500	16 0
Bury	40 acres to 400	25 0
Bythorne . .	80, 150, 200, 300	19 0
Catworth . .	40 to 400	20 0
Caldecot, &c. .	220 to 400	20 0
Chesterton . .	120, 200 to 300	30 0
Coln	40 to 200	16 0 open field 30 0 enclosed
Conington . .	10, 100 to 450	20 0
Denton . . .	110, 166, to 188	20 0
Doddington . .	220, 300, 430, 510	24 0
Easton . . .	50 to 160	20 0
Elton	100 to 350	20 0
Ellington . .	12, 30 to 300	18 0
Everton . . .	60, 100 to 200	7 0

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Parishes.	Size of Farms.	Rent per acre.
		s. d.
Eynsbury	20 to 500	23 0 per acre
Farcet	100 to 130	28 0
Fenny Stanton	40, 100 to 300	30 0
Fletton	200 to 400	20 0 to 30s.
Folksworth	50, 100 to 160	21 0
Gidding Magna	20 to 200	13 0
Gidding Parva	130 to 400	10 0
Glatton	14, 100, 200	24 0
Godmanchester	30, 100, 150, 300 to 800	15 0 before it was enclosed, now 30s.
Graveley	20, 60, 160, 200 to 380	5 0 before it was enclosed, now 12s. to 15s.
Graffham	20 to 350	17 0
Gransdon	30, 100, 150, 300	5 0
Haddon	120, 400, 470	20 0
Haile Weston	40, 120, 300, 700	20 0
Hamerton	120 to 330	20 0
Hartford	70 to 320	28 0
Hemingford Grey	50 to 200	31 6
Ditto Abbots	30, 100, 200, 400	20 0
Hilton	50 to 250	12 0
Holme	30 to 200	25 0 highland 15 0 fen land
Houghton	80, 90, 200, 250, 300	20 0 arable 30 0 grass
Huntingdon	4 to 30	40 0 to 120s.
Keystone	25, 35, 350, 350	16 0
Kimbolton	50, 200 to 600	20 0
Leighton Bromeswold	200 to 600	20 0
Long Stow	50 to 200	12 0
Luddington	36 to 210	9 0
Lutton	100, 400, to 600	10 0
Molesworth	20, 200 to 400	16 0
Morborn	150 to 440	17 0
Needingworth	50, 200, 300 to 400	20 0
Olford Cluny	35 to 380	27 0
Olford D'Arcy	20, 40, 200	10 0 arable 14 0 grass
Old Hurst	70, 90, 200, 300	15 0 said to be too high by 3s. per acre
Old Weston	100 to 260	9 0
Overton Longville	150, 500 to 600	22 0
Ditto Waterville	100 to 250	14 0
Papworth	220 to 350	17 0 to 18s.
Paxton Magna	40 to 200	8 0
Ditto Parva	85, 210 to 320	10 0
Perry	40 to 200	14 0

Parishes.	Size of Farms.	Rent per acre.
		s. d.
Pidley	40, 200, 650	14 0 per acre
Ramsey	20 to 400	20 0
Ravley Magna	100 to 300	20 0
Ravley Parva	52 to 130	20 0
Ripton Abbots	30 to 300	16 0
Ripton Regis	240, 250, 300 to 400	12 0
Sawtry St. Andrew's	50, 100 to 600	
Sawtry St. Judith	100 to 400	20 0
Saint Neot's	80 to 400	22 6
Saint Ives'	50 to 300	30 0
Somersham	50, 500 to 600	15 0 fen land, 25s. to 30s. highland
Southoe	400 to 600	28 0
Spaldwick	20, 100, 330	30 0
Standground	100, 300, 500	30 0 highland 20 0 fen land
Stebbington	100, 200, 350	13 6
Steeple Gidding	300 to 700	20 0
Stewkley Magna	70 to 350	10 0
Stewkley Parva	10, 15, 40, 50, 100, 400	16 0
Stilton	100, 300	11 0
Stoughton	50 to 170	15 0
Swineshead	40 to 200	12 0
Thurning	70 to 220	7 0
Toseland	70, 210, 220, 400	9 0
Upton	30 to 150	8 0
Upwood	20, 40, 60, 300	15 0
Warsley	40, 110, 200	8 0
Warboys	30, 120, 150	20 0
Water Newton	30, 300, 380	25 0
Wistow	30 to 400	12 0 highland 6 0 fen land
Winwich	46, 55, 66, 70, 300, 330	15 0
Witton	70, 80, 600	30 0 grass, 20s. tillage
Woodstone	30, 140, 200, 300	20 0
Wood Walton	25, 300, 400	21 0
Wood Hurst	40, 300	17 0
Wooley	160, 840	17 0
Yaxley	30, 50, 300, 400	21 0 to 40s.
Yelling	50, 110, 260	7 0

It will be observed by the foregoing list that there are many large farms in Huntingdonshire, though small ones very much preponderate; the rents run from 5*s.* per acre, to 30*s.* per acre; in a very few instances to as high as 40*s.* in one instance to as high as 120*s.*; but that it will be seen is in the neighbourhood of Huntingdon, where such rents are given for small pieces of land, for the conveniency of gentlemen, tradesmen, &c. keeping a horse, cow, &c. The great advantage of enclosing is strikingly conspicuous in several instances, the rent being more than doubled.

Mr. Scott observes that in the fen-farms in general, and always where they have but only a few small agricultural offices, they make a well contrived large farm-yard; with a watering place or two in it, all round the east, north, and west sides, and sometimes round the whole of the farm yard, except where the buildings stand. The wall is often made of cole-seed straw, is about six, eight or ten feet broad at the bottom; and they carry the straw wall up six or eight feet high, tapering narrower till it comes to the top. This makes a very warm fence, and will endure many years with now and then a little fresh cole-seed straw or stubble laid on the top; and as there is plenty of such straw in the fens, it is of very little value for any other purpose. Such farm-yards are frequently parted into two or three partitions, so that the farmer can put his horses in one part, his young stock in another, and his hogs in that part that is next to the barn-doors.

SECT. III. IV. V.—TITHES, POOR RATES, AND LEASES.

THE following Table explains the manner in which the land is occupied.

Parishes.	Tithes.	Poor Rates.	Leases.
		s. d.	
Abbotesley .	tithable	7 6 per l.	a few
Alconbury .	tithe free	3 0	a few
Alwalton . .	tithable 3*s*. 6*d*. per acre	2 8	none
Burham . .	tithe free	3 6 to 4s.	some for 12 years
Bluntisham .	tithable	5 0 per l. levied on 2-3ds. of rent	none
Brampton .	tithe free	3 0	none
Brington . .	tithe free	3 0	none
Broughton .	tithe free	2 6	for 21 years
Buckden . .	tithable	6 0	none
Buckworth .	tithable 2s. 6d. per acre	2 6	none
Bury . . :	nearly all tithe free	2 6	from 10 to 11 years
Bythorne . .	tithe free	4 0	for very short date
Catworth . .	corn rent in lieu	3 6	for 14 years
Caldecot . .	tithable	3 0	none
Chesterton .	tithe free	1 2 for the last 7 years	none
Coln . . .	tithable	3 6 on 2-3ds of rent	for 4 years
Conington .	composition in lieu	2 6	none
Covington .	tithe free	1 6	none
Denton . .	tithe free	3 3	none
Doddington .	tithe free	3 0 on 2-3ds of rent	for 12 years
Easton . .	part tithe free, part not	4 0 on ditto	for 7 and 14 years
Elton . . .	tithe free	2 9	none
Ellington .	tithe free	5 0	for 7, 12 and 21 years
Everton . .	tithable	3 0	for 3 years
Eynsbury .	tithe free	5 0	a few
Farcet .	tithe free	2 0	none
Fenny Stanton	tithe free	5 0	none
Fletton . .	tithe free	2 0	none
Folkesworth .	greatest part tithe free	3 0	for 11 years

Parishes.	Tithes.	Poor Rates.	Leases.
		s. d.	
Gidding Magna	tithe free	6 0 per *l.*	none
ditto Parva	tithable	2 0	none
Glatton . .	tithable	4 0	none
Godmanchester	tithe free	5 0	for 3 years
Graveley .	tithe free	4 0	none
Grafham . .	tithe free	3 0	for 12 years
Gransdon . .	tithable	5 6	none
Haddon . .	tithable 2s. 6d. per acre	1 0	for 14 years
Haile Weston	ditto	4 0	for 21 years
Hamerton .	ditto	2 6	none
Hartford . .	tithe free	5 0	none
HemingfordGrey	tithe free	2 3	none
ditto Abbots	tithe free	2 6	none
Hilton . .	tithable	5 0	none
Holme . .	tithable	2 6	none
Houghton .	tithe free	3 0	a few
Huntingdon	tithable 6s. per acre	7 0	none
Keystone .	ditto	3 0	for 6, 12 and 18 years notice one year before they quit
Kimbolton .	tithe free	4 6	none
LeightonBromswold . .	tithe free	3 0	for 14 and 21 years
Long Staw .	tithe in kind	5 0	a few
Luddington .	tithable 3s. per acre	5 0	none
Lutton . .	tithable 1s. 6d. per acre	1 6	none
Molesworth .	tithe free	4 0	a few
Morborn . .	tithable 3s. 6d. per acre	2 0	none
Needingworth	tithe free	5 0	a few
Offord Cluny Ditto D'Arcy	tithe free tithe free }	2 6	one lease
Old Hurst . .	tithe free	2 6	one lease
Old Weston .	tithable	6 0 on 2-3ds of rent	for 3 years
Overton Longville . . .	tithe free	1 0	none.
Ditto Waterville	tithable 4s. per acre	3 0	for 21 years
Papworth .	ditto	1 6	for 7 years
Paxton Magna	ditto	4 6	for 9 years
Paxton Parva	ditto	3 0	for 3 years
Perry . . .	ditto	5 0	none
Pidley . . .	new inclosure, tithe free, old inclosure, tithe in kind	2 0	none
Ramsey . .	chiefly tithe free	5 0 on 2-3ds rental	none
Ravley Magna	tithe free	3 0	for 21 years

Parishes.	Tithes.	Poor Rates.	Leases.
		s. d.	
Ravley Parva	a modus in lieu	6 0	none
Ripton Abbots	tithable 3s. per acre	2 0	one from Mr. Stratton
Ditto Regis	tithe free	4 6	2 for 21 years
Sawtry St. Andrew	tithe free	6 6	none
Ditto St. Judith	tithe free	3 0	none
St. Neot's	tithe free	4 0	a few
St. Ive's	tithe free	7 0	none
Somersham	old inclosure, tithable, new inclosure tithe free	3 0 on 2-3ds rental	2 leases
Southoe	tithe free	2 6	for 15 years
Spaldwick	tithe free	5 0	from 7 to 14 years
Standground	tithe free	2 0	one lease
Stebington	tithable	4 0	none
Steeple Gidding	tithable	2 8	none
Stewkley Magna	tithable 4s. 6d. per acre	3 6	none
Ditto Parva	tithe free	3 0	one for 21 years
Stilton	tithable	3 6	none
Slonghton	tithe free	5 0	none
Swineshead	tithable	4 0	none
Thurning	tithable	4 6	none
Toseland	tithable	3 6	none
Upton	tithable	3 0	none
Upwood	tithable	4 0	none
Warsley	tithable	4 9	none
Warboys	tithe free	2 0	for 21 years
Water Newton	tithable 4s. per acre	2 3	for 12 years, but at option every 4 years
Wistow	ditto	8 0	for 6, 9 and 12 years
Winwick	tithe free	3 0	for 14 years
Witton	tithe free	2 6	a few
Woodstone	tithable 4s. per acre	2 0	none
Wood Walton	ditto	1 6 on 2-3ds of rent	none
Wood Hurst	tithe free	3 0	for 21 years
Wooley	tithe free	2 0	for 12 and 14 years
Yaxley	tithe free	4 0	none
Yelling	tithable	8 0	none

Very little more than half the parishes are exonerated from tithe, but where enclosures have taken place, this desirable event has also taken place as far as was practicable, the greatest possible advantages always being the result in every respect. The poor-rates are rather more than

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than 3*s.* 6¼*d.* on an average of the whole county; they are highest at Abbotesley and Yelling, which it will be observed are both *unenclosed parishes*, and are the lowest at Chesterton, which is an *enclosed parish;* and about half of it under the plough. There are no leases granted in the greater part of the parishes, and in some of them they are only made for three years, which is much too short a space of time to be of any material benefit to either landlord or tenant. It may be observed that the leases run from three to four, to six, seven, nine, twelve, fourteen, and twenty-one years. I prefer the two latter, but should recommend leases for twenty-one years with proper restrictions on all *large farms*, as one great means of their being essentially improved, by thus giving the tenant a security for expending money, and a proper scope to exert his abilities.*

SECT. I.—EXPENSES AND PROFITS.

UNDER this head I propose making calculations of expenses and profit under four different rotations of crops, shewing the different proportion of profit under each, the first and second being what I conceive to be the most proper method of management on the strong sour clay lands in this county, and setting in a true light the effects of paring and burning; the first rotation being, as it will be seen, superior. The third rotation is more upon the cattle or stock system, and the fourth rotation is drawn from the present method of managing, by summer fallows and sheep folding, and shews the ill effects of that system.

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* See observations on leases, new edition of Experienced Farmer, vol. 2, pages 288 to 291.

In the first rotation it may be observed that the rape crop is eaten off by sheep, and then stands for seed; for which purpose it must be sown in the last week in June or first week in July, being eaten by the sheep in the fore part of winter; and in the ensuing spring as soon as the stalks begin to put out buds, they should be mown: there are only four quarters of seed per acre allowed in the account, as when the crop is eaten off by sheep, it seldom proves so productive, nor is the seed so bold a sample; but nevertheless it is a safe way to do it on these soils; and to get the land ploughed early, for should the rapes not happen to stand the winter for seed, a crop of oats may be sown in the spring. It may probably be observed by some on looking over the calculation, that I have adopted a kind of *straight-forward farming*, as I have not given any manure in the whole time, but such will please to observe that after the rape-seed crop, I have made a charge for burning the rape straw and stubble, which is a second dressing after the paring and burning, which I am of opinion would have the best effect; for although paring and burning does destroy the eggs of flies which were laid there when in sward for their future progeny, yet as these eggs are deposited annually for the production of reptiles, which speedily turn to flies at a certain season of the year, and the rape-seed crop is a very likely crop for them so to deposit their eggs in the leaves, &c. forming a very convenient receptacle for them, the burning of the straw may on this account, as well as affording another dressing to the land, be highly beneficial. Before I knew the nature of these flies and their progeny, I have been often much surprized to find land infested with reptiles, &c. soon after paring and burning, which I frequently have known to be the case; though certainly in a very small degree, when compared with land which had been broken up without paring and burning. The reader will therefore, I hope, readily allow the probable advantages of thus burning the straw; as although it cost 20*s.* per acre, it will in all probability in the future crops pay tenfold for such an expense. It should also be remembered from the first crop being good, that with *proper care and attention* the future crops are almost sure to be so, and that by thus raising full crops, the greatest advantages arise from the increase of the *dunghill.* There is the greatest necessity therefore for using the most correct method in paring and burning, as upon it depends all the future crops in a rotation, and the future improvement of land for some time at least. Although this rotation of crops takes seven years, and the land is not laid down until the eighth year, yet by the paring and burning, and the straw, &c. burning, it gets (though fresh land) two dressings in seven years, which is as much or more than it gets in the old system, though it has then been many years under the plough; and I do not hesitate to say, (speaking as far as all human aid goes) that all the proposed crops would be good ones, and if proper care was taken of the straw, and it was made into compost, there would not only be sufficient for all the purposes of the farm, but a surplus. There are two crops of wheat, one of beans, one of barley, and one of clover, being five crops, supposing each crop to produce two cart-loads of dung in each year, which properly made into compost would bring out six loads, that would be thirty loads of compost dung for every acre when ready for laying down. I have proposed fifteen loads per acre on fallowing and sowing the rapes and seeds; there would then remain two more dressings, as seven or eight loads of dung compost would be quite sufficient for this purpose. At the end of the first year, I should prefer mowing the seeds, as it would give them a stronger root, and if they stood to be riper than is usual for hay, I should have no objection, as some seeds would then fall on the land; the compost dung after the seeds were mown being strewed upon them, and the land only lightly stocked, (or if not stocked at all *the better*, but this must depend on circumstances,) it would be found a very profitable method; as from the seeds being thrashed out, there would scarcely be a crop on the farm which would pay better. The reader will observe there is still another dressing in hand, here would then be a considerable advantage by mowing the seeds the first year, as it would occasion such an addition to the manure, from the hay being consumed and made into compost, as would, with what was left on hand, produce two more dressings of about six cart loads each per acre. When such strong sour clay soils are laid down for pasture or meadow, the grass should never be eaten *bare*, until it had got a good natural sward, as the greatest objections I have ever heard to ploughing up poor sour worn out clay meadows and pastures, is the difficulty of getting them into sward again. This has been always thought difficult; on my father's farm which was of poor sour clay we found it so, to get a cover upon it again; now though my father managed many things very well, he erred in laying down this kind of land; in the first place he never took but two green and two white crops, after paring and burning; this I now know to be very wrong, but my father's fear was that by taking more crops he should injure the land, his dependance not being so much on the plough, as on grazing and breeding; he would have thought that a crop of seed from rapes would totally ruin the land; notwithstanding we had neighbours who cropped land in a very idle way, and who took rape seed, and many crops of white corn after it, and who laid their land down to grass at half the expense which we were at, and their land generally got a better cover than ours. This arose from our eating off our seeds the first year instead of mowing them, and eating them very bare, so that sometimes the sheep would tear up the very roots of the artificial grasses; and from our not giving time enough for the earth to be *sufficiently pulverized*, and in a fit state for the reception of such small seeds, there being great quantities of the old sward's roots, noxious plants, and whins or thorn-weed remaining in it, some of the old bad grass even growing again. It is very improper on soils of this description, which are intended to lie any length of time, to eat the seeds near, the first or even the second year; on all *mellow* soils it is exactly the reverse, as on such, the land being generally taken up in two years after it is seeded, the profit would be lost if the crop was not eaten. Another and most essential thing we neglected was to let the land have the manure made from its produce; this is, I regret to say it, too often the present practice, where permission is given for ploughing up fresh land. I wish it to be observed that I give the decided preference to this first rotation, for the improvement of sour clay lands, of which description there is very much in this county, which are now nearly covered with ant-hills, spire-grass, whins or thorn-weed, dwarf thistles, and in the grass which it really produces, there are two bad and unuseful plants to one useful or good one, the roots of which are as hard and as tough as whalebone, requiring much time to totally eradicate them. But as I draw four fair calculations in debtor and creditor accounts, the reader may draw his own conclusions, and take which he thinks proper. In the three first calculations it will be observed there is but a trivial expense at the beginning, but it may perhaps be thought extravagant at the ending; but if due attention is paid to the mode of cropping the land, it will be found to have provided sufficient sums of money for purchasing seeds; and money is never better laid out than in giving land, intended for pasture or meadow, plenty of seeds. There is more seed sown for the rape crop than is the general practice, my reason for which is that soils of this nature are often very dry at that time of the year in which it is sown, and on that account comes up patchy or in clumps, being much thicker in some places, and thinner in others than it ought to be; therefore those thick parts might be made thinner, or properly so by hoeing up the weaker plants, and drawing out the stronger ones, and transplanting them to the thin parts. I have further to observe that in all my observation of rape-seed crops, I have always known a greater produce from thick crops than thin ones. I have frequently conversed with gardeners near London who are in the habit of raising cabbage seed; it is a custom with them to plant the stalks of cabbages, when for seed, in rows very near together, by so doing they say that they not only raise more, but much better seed, than they should do were they to plant them thin, as from resting one on another when in blossom, the wind and rain does not injure them so much as when they branch. The bad effect of frost on the rape crop when in blossom or flower, would in a great measure be warded off by thick planting, and when it came to ripen, by the plants lodging or resting against each other, the wind would not do it so much injury; it would ripen also much more regularly, and the seed would consequently be a much better sample. The rape straw should be burnt as soon as possible after thrashing; as it is at that time rather green, there are more salts in it, which may be observed from those who burn fern, nettles, &c. for making soap, doing it as soon as they are mown. When in Ireland, I saw a great deal of this done the day after mowing; as soon as possible after burning, the land should be harrowed so as to draw the ashes and some little soil together, then it should be ploughed, as the ploughing for the rape crop ought only to be two inches in depth, (the furrows being four inches wide), the ploughing ought this time to be about half an inch deeper, so as to just bring the ashes (which were made on paring and burning) up to the surface; the land should then lay before the sowing of wheat, at least fourteen days, so that the earth may get settled. I have directed four bushels of wheat for seed which is more also than usual; my reasons for which are, that on sour clay soils, if the sowing takes place in *dry weather*, I have known the wheat mould in the ground, and in winter the frost makes them lighter in the ensuing spring than almost any other kind of land, causing the disease *root welt*. If the land be left in a light state at the time of sowing, it will not only be a great means of the *root welting*, but of the worms destroying the wheat in the spring. In a very ingenious publication on the grub, it is shewn that many of the eggs producing them may be deposited in the rape crop, and will, if not prevented, injure the wheat crop very much, the harrowing in, therefore, of the wheat should be done with a large heavy coarse harrow, with many horses or oxen to draw it; the latter are preferable, their feet being better formed for treading land beneficially than horses, their step being shorter, and moving slower, they tread harder and may be a means of destroying some of the eggs producing the grub, and at all events will put the land into a state which the fly will not prefer for the future production of her species. The earlier the sowing is done the better, as from an experiment made in this county of sowing wheat as early as the latter end of the second week in August, on such soils, and the crop proving not only very productive, but getting ripe earlier by fourteen days than any other in the neighbourhood, it is proved to be a very beneficial practice. With respect to the *quantity* of seed also, I have tried three and four bushels, and one year I had greater produce where I sowed four bushels per acre, by four bushels, than on that where I only sowed three bushels; the next year I had no difference in my crops between the three bushels and four bushels of seed, except that the latter ripened much earlier. Thick sowing is also a likely preventive to the mildew, so that on all these accounts it certainly pays well to sow the additional bushel. After the wheat crop was weaned from the kernel, sheep should then be put upon it all *the winter*, so as to eat every blade off as it grew; if sheep were not put on such soils on the crops until *spring*, which is the usual method in eating off wheat crops, they would pull many roots up, but from eating it and treading it all *winter*, the wheat would gain a firm root; so soon as spring appeared, and the wheat began to take its stem, then the sheep should immediately be taken off, and the land bush-harrowed and rolled. After the wheat crop was reaped, the stubble should be carefully mown, and raked up together with all other refuse stuff, and taken off the land. In making the drills for beans, cross the lands, (for these clay lands generally lying ridge and furrow, and rather high from the drills being made cross wise), it would lay the land dry during the winter; the sooner the drills were made after the wheat stubble was mown, &c. the better, as the land would then lay in the way the gardeners prepare their land. The drills for the beans should be made by the plough, but as this kind of land is apt to get lumpy, I would plough them all back again, so that the drill should be made where the ridge was at the first time of ploughing, and the land would be so light between the rows, as to afford great facility in earthing them with the plough with two or three ploughings in the summer. Earthing beans should be done by ploughing from the rows first, at the time they are about three inches high, very little earth being raised at any one time, as when much earth is raised at once, lumps will fall upon the beans, and do them much injury; if the land should be wet at the proper time for this process, a light plough, drawn by a mule or an ass, will be better than by a horse. The compost fur the bean crop may be carted on any time in the winter.

The advantages of the several ploughings on this land, lying with high ridges and deep furrows, are very evident, the first ploughing will for the rape crop be down, with a furrow ploughed out in the furrow to carry away the water; the next ploughing for wheat will be upwards, and the next for beans across, which with the process of drilling for barley will *rather lower the ridges*, and fill the furrows. I do not think it a good way to endeavour to lay such lands entirely level, it being quite impossible to lay it so, without throwing the tops of the ridges underneath, which being the best part of the land, much injury is done thereby. When the fallow comes on, the first ploughing would be downwards, at that time therefore two or three furrows should be ploughed back to back, to form a small land in the furrow; then during the time of the fallowing process, gather a sort of small ridge in the furrow, of about three feet in width, so that when the last ploughing was done in order to sow the seeds, there would be a small land in the furrow, and a furrow on each side to take off the water, which would drain from the large ridge; thus the land would be more effectually drained from having two furrows instead of one to drain it, and not be so liable to grow rushes, hassocks, and water plants, as it was before when it was what is termed *slacken* with water. The second rotation is in some respects like the first, only supposing the tenant to be restricted from letting rapes stand for seed, many being of opinion that it is a bad method; I am far from thinking so.

The third rotation differs very much, and although many may think it better adapted to improve land more than the two first, I am of a contrary opinion. In many situations on this kind of land, sheep-breeding is the chief profit, a crop of turnips is therefore of great value, though these clays are very improper for turnips on account of the wetness of the layer, yet by paring and burning a crop of turnips might be raised equal to any in the kingdom. I have seen as fine crops of turnips on this kind of land on my father's farm as I ever saw, being remarkably sweet, and of a most fattening quality, and as the sod was not broken by its toughness, it would bear the sheep, and be also very good layer. I have proposed oats or spring wheat, but have made my calculations on the former, as barley on such fresh land is generally of a very coarse sample, and land of that quality is not good for oats except it be fresh, but the straw of oats is very useful on these breeding farms, or I should otherwise prefer spring wheat, then beans in drills, or another crop of turnips dunged, then barley and seeds, that being the more common way of laying down land, though I do not like it, knowing from experience that there is no method of laying down land, of a poor coarse clay, equal to fallow for rapes, nor can it be done properly by any other way, as, should it happen to be a wet season at the time of sowing the barley and seeds, the land will set like a brick, and both barley and seeds grow very indifferently, this being very often the cause of these kinds of clay not getting a proper sward upon them. When, on the contrary, such land is fallowed for the rape crop, an opportunity is obtained of sowing the crop on a mellow mould, which it is impossible to do in any other method. If instead of beans there was a crop of turnips eaten off by sheep, which was my father's way, and it generally happened that the land from the treading of the sheep was like a floor, to plough up, if ploughed before it became so, it then ploughed in what farmers term a *clatty* way; so that whether ploughed wet or dry it was then equally bad to effect it; for any spring crop it is therefore the best way of managing this kind of land, to plough it as early in the winter as it can be done, never having any land except lea land to plough after Christmas, and sow the spring crops on that ploughing which is called a cold tilth; I have seen barley as fine, heavy, and as white, grown in this way on clay soils, as I ever saw on any of the soils reckoned best for barley. One great prevention to agricultural improvements, has been the idea that new land occasions the rot in sheep, than which nothing can be more absurd or inconsistent, it not being the food which rots sheep; it is not possible that plants should produce reptiles, it might as well be said that a cabbage would produce a horse; the cause of the rot in sheep is as visible as a pack of hounds devouring a fox; the liver of every sheep that is taken with the rot, being as much devoured by reptiles as putrid flesh is devoured by maggots. As to fresh seeds, therefore, rotting sheep, that cannot in any way be the cause, except the animal or insect which deposits the animalculæ or eggs, chuses such plants for that purpose in preference to all others, but as all such plants are to be found more or less in all old pastures, that cannot be any reason; let it be what it will that lays the animalculæ or eggs, it deposits them as a hen, or any other thing which lays eggs does, wishing to place it in some secure place, where it hopes it will remain undisturbed, consequently deposits it in holes or swamps where there is water, those places being the most unlikely for any animal to eat from: thus it is that hard stocking causes the sheep to take the rot, and by properly draining land it becomes sound; it seems to me therefore that it is caused by taking away those places, in which the insect or animal delighted to deposit its seed or egg. The death of the sheep is caused by loss of blood, which those flukes or reptiles suck entirely up, as much so as though he were to be bled to death by opening a vein. I have read authors who compare the rot in sheep to consumptions, others to colds in the human race, I cannot really but very much wonder, how such comparisons come to be made, as it has been known that the greater part of the sheep in a county have been rotten in one season, but it never was known that all the people in a county were consumptive, or all had colds. My father was in the habit of ploughing up land of the same quality as the clays in this county, and laying them down with seeds, which had before he occupied it been rotten ground, and by his great application to open draining, he never had any rotten sheep on new seeds. As this report is made for the improvement of the county of Huntingdon in particular, I make these remarks, and adduce these instances, that it may be seen I am well aware of the misfortunes which may accompany such improvements, and I particularly warn all who may be disposed to make them, to previously *open drain* the land, as the *only preventive* to the rot in sheep in such situations. The reason I say *open drains*, is that such lands can alone be effectually drained by such means, which may always be known by this single remark, all land which has no springs of water, is the certain sign of adhesiveness in the soil; and the improver of land may always take this as a certain rule, that where water cannot force its way through the earth, no *art* can effect it. I have made these remarks and calculations more particularly on the strong clay soils of this county; improvement being the most wanted, and the least understood on them; there being several thousand acres in this county of a very different nature, and very differently and properly managed. The calculations are all drawn from the same farm of two hundred acres. The same expenses being charged in each, except what are incurred from managing the soil; the farmer's expenses of living, property-tax, &c. being omitted, it being merely my wish in plain figures to shew the difference of *the profits* from the different systems out of which each farmer must live, pay taxes and all other charges which may come against him. The first calculation is begun at a time when it is supposed that ninety-six acres of land are in a convertible system, and when he has laid fifty-four acres of the land down again to seeds, which will keep two ewes in the winter much better than they were kept upon the old worn-out land; two shear hogs in the summer, and one head of cattle to four acres. The farmer on this farm will have for meadow twelve acres of clover, and twelve acres of grass seeds; the clover being mown twice will be equal to thirty-six acres, and will cut considerably more than sixty acres under the old system; the second crop of clover, if wanted, may therefore be eaten by his lambs should they need it; then he will have one hundred and four acres in grass, which at twelve acres taken up annually, he would be sixteen years in getting through the whole of the farm, was it all of this sort of land; so thus calculating the land would have to lay eight years before it was again taken up, and the same process might be continued; but supposing the farm to have fifty acres out of the two hundred not proper for the plough, in that case the land would have but four years to lay in seeds, there being in most of those clay countries a sort of poor moor in swamps, which is of an unuseful sort for any thing but keeping store stock in summer, having a strong clay bottom so very adhesive as to hold water, so as to keep the top stratum in a cold wet state, and growing a sort of blue grass, hassocks, and rushes, and is the least improveable of any land I know. My father pared and burnt land of the quality I have just been describing, it burnt to a kind of black ash, which appeared to be a certain improvement, but when the land came to be ploughed, it would bring no crop of any value, and when laid down again, though *bad* before, it was now *worse*. The only improvement which can be made on that sort of land is to drain it, which from the nature of it, is a very expensive operation, requiring so many drains on account of the strong clay underneath; so let what will be done at it, it absolutely costs more than it is worth, and is very dangerous land for sheep; I should therefore advise that where there was one acre of this description in a twenty acre field, that it should be enclosed, as that one acre might occasion the rot in all the sheep in the pasture, and when enclosed in that way, the fence with a good deep ditch would often be the best drainage, with some other open drains which could be devised, and cattle and horses might be put on it. On lands liable to rot sheep, horses ought not to be depastured among them. To return to the calculation, there would then remain one hundred and fifty acres, (supposing these fifty acres to be improper for the plough) of convertible land, ninety-six acres in tillage, consequently only fifty-four acres in seeds for sheep, and instead of eight years, it would only be four years, before the land was taken up again; then if for the first four years it keeps two ewes per acre, that will be one hundred and eight, and the fifty acres of bad land to keep one ewe per acre, in all one hundred and fifty-eight ewes; then supposing them to be diminished by losses in lambing, &c. to one hundred and fifty, there would be for the summer-stock three hundred inclusive of the lambs; there would be seventy-five heder hogs to sell, and seventy-five sheders to make up the summer-stock, producing two hundred and twenty-five fleeces, altogether three hundred and seventy-five, which is more than can be kept on the old system, and of a much better quality; supposing the land to keep one head of cattle to three acres, and the old bad land, one head to four acres, the fifty-four acres of new land will keep eighteen head, and the old land twelve head, making together thirty head of cattle, then the account for stock, &c. as a capital will stand thus:

HORSES.

		£.	s.	d.	£.	s.	d.
6 Draught horses,	at 20*l.*	120	0	0			
1 Riding horse		20	0	0			
7					140	0	0

CATTLE.

			£.	s.	d.	£.	s.	d.
6	Cows for milking,	at 18*l.*	108	0	0			
6	Calves . . .	at 50*s.*	15	0	0			
6	Yearlings, . . .	at 5*l.*	30	0	0			
6	Two year olds .	at 7*l.* 10*s.*	45	0	0			
6	Three ditto . .	at 12*l.*	72	0	0			
30	. . . .					270	0	0

SHEEP.

			£.	s.	d.	£.	s.	d.
150	Ewes and Lambs .	at 50*s.*	375	0	0			
75	Shear hogs . .	at 35*s.*	131	5	0			
225	. . . . .					506	5	0

PIGS.

			£.	s.	d.	£.	s.	d.
2	Pigs	at 45*s.*	4	10	0			
1	Sow for breeding . .		3	10	0			
3	. . . .					8	0	0
	Total of Capital in Live stock, .					£ 924	5	0

Dead Stock.

	£.	s.	d.	£.	s.	d.
One Waggon , .	28	0	0			
Two carts . .	35	0	0			
Two ploughs . . .	8	0	0			
Winnowing machine .	10	0	0			
Horse harness . .	30	0	0			
Wheel-barrow, forks, &c.	5	0	0			
Sacks . .	4	0	0			
Total of dead stock .				120	0	0
Total of Capital .				£ 1044	5	0

At 8 per cent. for interest, wear and tear, &c. being £ 83 10 9 carried as a debit to general account, page 64.

Dr. LIVE STOCK.				LIVE STOCK. Cr.			
CATTLE.	£.	s.	d.		£.	s.	d.
6 Cows bulling, at 2*s* 6*d.*	0	15	0	6 Four year old beast, at 20*l.*	120	0	0
				Butter . .	30	0	0
					150	0	0
				Expenses, per contra .		15	0
				Carried to general account, p. 64 . .	149	5	0

Dr. LIVE STOCK. LIVE STOCK. Cr.

SHEEP.	£.	s.	d.		£.	s.	d.
				75 Shear hogs at 45s.	168	15	0
Hire of tups, being 3 at 10l.	30	0	0	75 Drape ewes, at 50s.	187	10	0
Washing, shearing, &c 225 sheep, at 5s. per score	2	16	0	225 Fleeces of wool, 4 to a todd 56¼ todds, at 28s.	78	15	0
					435	0	0
				Expenses, per contra .	32	16	0
	32	16	0	Carried to general account, p. 64. . .	402	4	0

HORSES.	£.	s.	d.		£.	s.	d.
				2 Two years old colts, at 20l.	40	0	0
3 Mares covering, at 1l. 1s.	3	3	0	Expenses, per contra .	11	11	0
Shoeing horses	8	8	0				
	11	11	0	Carried to general account, p. 64. . .	28	9	0

PIGS.	£.	s.	d.		£.	s.	d.
				8 Pigs, at 40s.	16	0	0
Sow to the boar	0	2	6	Expenses, per contra .	0	5	0
Cutting 10 pigs, at 3d.	0	2	6				
	0	5	0	Carried to general account, p. 64. . .	15	15	0

Corn for poultry, say	3	0	0	Poultry	7	0	0
				Corn for them, per contra	3	0	0
				Carried to general account, p. 64.	4	0	0

Dr. TILLAGE. TILLAGE. Cr.

12 Acres RAPES.	£.	s	d.		£.	s.	d.
Paring and burning, at 25s. per acre	15	0	0	Eaten by sheep this year and intended for seed in the next.			
Plowing and harrowing at 10s. 6d. per acre	6	6	0				
Seed 12 pecks		15	6				
Carried to general account	21	19	6				
12 acres carried over							

Dr. Tillage.				Tillage.	Cr.		
12 acres brought over	£.	s.	d.		£.	s.	d.
12 Acres Rape Seed.				Seed 48 qrs. at 36s.	86	8	0
				Expenses, per contra	8	8	0
Mowing, reaping, threshing, &c. at 14s. per acre,	8	8	0	Profit, see general account, p. 64. . .	78	0	0
12 Acres of Wheat.	£.	s.	d.		£.	s.	d.
Burning rape seed straw at 20s. per acre.	12	0	0	Produce 48 quarters, at 76s. per qr.	182	8	0
Plowing and harrowing at 10s. 6d. per acre	6	6	0	Straw, at 30s. per acre.	18	0	0
					200	8	0
Seed, 48 bushels, at 9s. 6d. per bushel	22	16	0	Expenses, per contra	58	16	0
Rolling, barrowing, bush harrowing, &c. at 2s. 6d. per acre	1	10	0				
Weeding, at 6d. per ac.	0	6	0				
Reaping and harvesting, at 16s. 6d. per ac.	9	18	0				
Thrashing 48 quarts at 2s. 6d. per qr.	6	0	0				
	58	16	0	Profit carried to general account, p. 64.	141	12	0
12 Acres of Beans.	£.	s.	d.		£.	s.	d.
Plowing and harrowing 10s. 6d. per acre	6	6	0	Produce 48 qrs, at 44s. per qr.	105	12	0
Seed 36 bushels, at 5s. 6d. per bush.	9	18	0	Straw	18	0	0
Hoeing, at 5s per acre.	3	0	0		123	12	0
Reaping and harvesting 5s per acre	3	0	0	Expenses, per contra	27	0	0
Thrashing 48 quarters, at 2s. per qr.	4	16	0				
	27	0	0	Profit carried to general account, p. 64.	96	12	0
12 Acres of Barley.	£.	s.	d.		£.	s.	d.
Plowing and harrowing at 10s. 6d. per acre	6	6	0	Produce 60 quarters, at 40s. per qr.	120	0	0
Seed, 48 bushels, at 5s. per bush.	12	0	0	Straw	18	0	0
					138	0	0
168lb. of red clover, at 8d. per lb.	5	12	0	Expenses per contra .	55	0	0
Carried over	23	16	0	Carried over	109	0	0

48 Acres carried over.

Dr. Tillage. Tillage. Cr.

48 Acres brought over

	£.	s.	d.		£.	s.	d.
Brought over	23	18	0	Brought over	103	0	0
72lb. of trefoil, at 6*d.* per lb.	1	16	0				
Rolling and bush-harrowing, at 2*s.* 6*d.* per acre	1	10	0				
Weeding 6*d.* per acre	0	6	0				
Harvesting, 5*s.* per acre	3	0	0				
Threshing 60 quarters, at 1*s.* 6*d.*	4	10	0				
	35	0	0	Profit carried to general account, p. 64.	103	0	0

12 Acres of Clover.	£.	s.	d				
Mowing and harvesting, 6*s.* per acre	3	12	0	Produce consumed by horses, cattle and sheep.			
Carried to general account, p. 64.							

12 Acres of Wheat.	£.	s.	d.		£.	s.	d.
				Produce same as the first twelve acres	200	8	0
Same as the first twelve acres of wheat, except 12*l.* for straw burning.				Expenses per contra .	46	16	0
	46	16	0	Profit carried to general account, p. 64.	153	12	0

12 Acres of Fallow.	£.	s.	d.
Plowing three times, 27*s.* per acre	16	4	0
Harrowing ditto 7*s.* 6*d.* per acre	4	10	0
Scarifying ditto 2*s.* 6*d.* per acre	1	10	0
Picking off refuse stuff, 1*s.* 6*d.* per acre	0	18	0
Rape seed, ¼ peck per acre, 4¾*d.*	0	4	9
Hay seeds, 12 quarters, at 10*s.* per qr.	6	0	0
Ray grass seeds, 24 bus. at 5*s* per bushel	6	0	0
120lb. white clover, at 1*s.* per lb.	6	0	0
72lb. trefoil, at 6*d.* per lb.	1	16	0
Carried to general account p. 64.	43	2	9

— 95

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96	Acres in tillage annually
54	Ditto in seeds Ditto
50	Ditto in old bad pasture
200	Acres total of the farm

GENERAL ACCOUNT

Dr. EXPENSES.	£.	s	d.
To rent of 200 acres, at 20s. per acre	200	0	0
Poor's rates, &c. 4s. 6d. per £.	45	0	0
Interest on capital, as in p. 60.	83	10	9
Two daily labourers	54	10	0
A man and boy (yearly)	16	10	0
Servant girl	8	10	0
Total expenses	403	0	9

PROFITS.	£.	s.	d.	Cr. £.			£.	s.	d.
By cattle, p. 60.				149	5	0			
Sheep				402	4	0			
Horses				28	9	0			
Pigs				15	15	0			
Poultry				4	0	0			
Total by live stock							599	13	0
12 Acres Rape, p. 61	78	0	0						
12 ditto wheat	141	12	0						
12 ditto beans	96	12	0						
12 ditto barley	103	0	0						
12 ditto wheat	153	12	0						
Total profit of tillage				572	16	0			
12 Acres rapes	21	19	6						
12 ditto clover	3	12	0						
12 ditto fallow	43	2	9						
Expenses of these to deduct				68	14	3			
Net profit of tillage							504	1	9
Total profits							1103	14	9
Deduct expenses							403	0	9
Net profit							700	14	0

In the second rotation of crops there will be eighty-four acres in tillage at once,and sixty-six acres in seeds or artificial grasses, which will cause the seed plots to lay five years before they are again taken up, and fifty acres as before in old bad pasture; there will be twelve acres of oats, twelve acres of beans, twelve acres of barley, twelve acres of wheat, twelve acres of turnips for the heder hogs, twelve acres of clover, twelve acres of fallow laying down with seeds. As there will be clover hay to assist in keeping the sheep, the sheder hogs may be kept behind the heders, giving them all clover hay; there are also many advantages in this rotation on the stubbles which were not to be had in the old summer fallow system, so that by this rotation the land may be brought into a convertible state, and very much improved, as in the four years which the land lays in grass, there will be three dressings of compost manure for it, while in the old system many acres never get any dung or manure at all, indeed there is no other way of obtaining manure, but by breaking up the old sward. This rotation of crops, causes a difference in the stock kept in sheep, as in this the stock of sheep will be one hundred and sixty-eight ewes and lambs, and eighty-four sheder hogs, making two hundred and fifty-two fleeces of wool, the other stock will be the same, as in the first rotation. As artificial grasses, or as they are generally termed seeds, keep declining after two or three years are over, therefore the method of letting them lay for five years is rather wrong, for whenever land declines in produce, it keeps losing vegetable matter, which ought never to be permitted when there is a possibility of avoiding it; four years would be more than this land ought to lie, were it not for the application of the compost manures on the seeds; it will also be observed that the burning of the rape-straw was materially advantageous, being a much cheaper manure than any other.

The account of stock (live and dead) as capital for this rotation will be

	£.	s.	d.	£.	s.	d.
Horses as before				140	0	0
Cattle ditto				270	0	0
168 Ewes at 50s.	420	0	0	567	0	0
84 Hogs at 55s.	147	0	0			
Pigs . .				8	0	0

Total capital in live stock	£ 985
Husbandry year as before	120
Total of capital	1105 as before at £8 per cent. per year £88 8s.

Dr. Live Stock.				Live Stock. Cr.			
SHEEP.	£.	s.	d		£.	s.	d.
				84 Heder hogs, at 45s.	189	0	0
Hire of Tups . .	30	0	0	84 Drape ewes, at 50s.	210	0	0
Washing, shearing, &c. 252 sheep at 5s. per score .	3	3	0	69 Todds of wool, at 4 to a todd, at 28s.	88	4	0
					487	4	0
				Deduct expenses, as per contra . .	33	3	0
	33	3	0	Carried to general account, p. 69.	454	1	0
				Produce of horses as in former rotation carried to general account, p. 69.	28	9	0
				Cattle as in former rotation, carried to general account, p. 69.	149	5	0
				Pigs as in former rotation, carried to general account, p. 69.	15	15	0
				Poultry as in former rotation carried to general account, p. 69.	4	0	0

Dr. TILLAGE LAND.				TILLAGE LAND. Cr.			
12 Acres of TURNIPS.	£.	s.	d.				
Paring and burning at 25s. per acre .	15	0	0				
Ploughing and harrowing 10s 6d. per acre	6	6	0	eaten by the sheep.			
Seed 48lb. at 1s.	2	8	0				
Rape-seed 12lb. at 3d	0	3	0				
Hoeing at 6s. per acre	3	12	0				
Carried to general account . .	27	9	0				

12 Acres of OATS.	£.	s.	d.		£.	s.	d.
Ploughing and harrowing, 10s. 6d. per acre	6	6	0				
Seed 96 bushels at 3s. 6d. .	16	16	0				
Rolling 1s. 6d. per acre	0	18	0	Produce 120 qrs. at28s. per qr. .	168	0	0
Weeding, 6d. per acre	0	6	0	Straw . .	18	0	0
Reaping and harvesting 8s.	4	16	0		186	0	0
Thrashing 120 qrs. at 1s. 6d. .	9	0	0	Expenses, as per contra	38	2	0
	38	2	0	Carried to general account, p. 69.	147	18	0

12 Acres of BEANS.	£.	s.	d.		£.	s.	d.
Ploughing for drills, 12s.	7	4	0				
Dung, 72 loads, 10s. 6d. per load .	37	16	0				
Seed, 36 bushels 5s. 6d. per bushel	9	0	0				
Harrowing, 1s. 6d. per acre . .	0	18	0	Produce 48 qrs. at 44s. per acre . .	105	12	0
Earthing, 3 times at 2s. 6d. each	4	10	0	Straw .	18	0	0
					123	12	0
Reaping and harvesting, 5s. per acre	3	0	0	Deduct contra expenses	68	2	0
Thrashing, 48 qrs. at2s.	4	16	0				
	68	2	0	Carried to general account, p. 69.	55	10	0

36 Acres carried over.

Dr. TILLAGE.				TILLAGE. Cr.			
36 Acres brought over.							
12 Acres of BARLEY.	£.	s.	d.		£.	s.	d.
Expenses as in p. 47.	35	0	0	Produce, as in p. 47.	138	0	0
				Deduct contra expenses	35	0	0
				Carried to general account, p. 69.	103	0	0
12 Acres of CLOVER.	£.	s.	d.	Carried to general account, hay consumed on the farms.			
Expenses as in p. 47	3	12	0				
12 Acres of WHEAT.	£.	s.	d.		£.	s.	d.
				Produce as in p. 47.	200	8	0
				Deduct expenses as per coutra	46	16	0
Expenses as in p. 47	46	16	0		153	12	0
12 Acres fallow for SEEDS.	£.	s.	d.				
Expenses as in p. 48.	43	2	9				
Carried to general account, p. 69.							

84 Acres in tillage.
66 Acres in seeds.
50 Acres old pasture.

200

GENERAL ACCOUNT.

Dr. Expenses.	£.	s.	d.
Rent	200	0	0
Assessments	45	0	0
Interest on capital	88	8	0
Two daily labourers	54	10	0
Men and boys	16	10	0
Servant girl	3	10	0
Total expenses	407	18	0

Profits.	£.	s.	d.	£.	s.	d.	£.	s.	d.
By Sheep, p. 66.				454	1	0			
Cattle				149	5	0			
Horses				28	9	0			
Pigs				15	15	0			
Poultry				4	0	0			
Total by live stock							651	10	0
12 Acres oats, p. 67	147	18	0						
12 ditto beans	55	10	0						
12 ditto barley	103	0	0						
12 ditto wheat	153	12	0						
Total amount from tillage				460	0	0			
12 Acres turnips	27	9	0						
12 ditto clover	3	12	0						
12 ditto fallow	43	2	9						
Deduct expenses of these 36 acres				74	3	9			
Net profit of tillage crops							385	16	3
Total profits							1037	6	3
Deduct expenses							407	18	0
Net profit							629	8	3

The third calculation is made supposing forty-eight acres in tillage, and one hundred and fifty-two in meadow and pasture, sixty of which must be in meadow, and ninety-two in pasture, twenty-four of which being in new seeds will keep two ewes per acre, and the remaining sixty-eight acres being old pasture, will keep one sheep per acre, making in the whole one hundred and sixteen ewes to tup; one head of cattle to four acres, will be twenty-three head of cattle; four horses to draw and one to ride, which will complete the stock of the farm. In summer there will be fifty-eight sheder hogs to keep up the stock, fifty-eight heders to sell, and fifty-eight drape ewes also for sale, consequently inclusive of lambs, there will be two sheep and a half per acre, the whole stock during summer being two hundred and ninety, and there will be one hundred and seventy-four fleeces of wool. The stock to be charged as a capital will be as follows:

		£.	s.	d.	£.	s.	d.
HORSES.							
Four draught horses £20 each		80	0	0			
One riding		20	0	0			
5					100	0	0
CATTLE.							
5 Cows	at 18l.	90	0	0			
5 Calves	at 50s.	12	10	0			
5 One year old	at 5l.	25	0	0			
5 Two years old	at 7l. 10s.	37	10	0			
3 Three years old	at 12l.	36	0	0			
23					201	0	0
6 Pigs					7	4	0
					308	4	0
SHEEP.							
116 Ewes	at 50s.	290	0	0			
58 Sheder hogs	at 35s.	101	10	0			
174					391	10	0
Total of live stock capital					699	14	0
Husbandry gear, &c. as before					120	0	0
Total sum as a capital					819	14	0

At 8 per cent. as before, £65 11s. 6d.

Dr. Live Stock.				Live Stock.	Cr.		
CATTLE.	£.	s.	d.		£.	s.	d.
5 Cows bulling, at 2s. 6d.	0	12	6	5 Four year old beast, at 20l.	100	0	0
				Butter . .	25	0	0
					125	0	0
				Expenses, per contra .		12	6
				Carried to general account, p. 73 . .	124	7	6
SHEEP.	£.	s.	d.		£.	s.	d.
				58 Heder hogs at 45s.	130	10	0
174 Washing, shearing, &c 5s. per score	2	3	6	58 Drape ewes, at 50s.	145	0	0
Hire of two tups	20	0	0	43½ todds of wool at 28s.	60	18	0
					336	8	0
				Expenses, per contra .	22	3	6
	22	3	6	Carried to general account p. 73. .	314	4	6
HORSES.	£.	s.	d.		£.	s.	d.
				One colt sold	20	0	0
2 Mares covering	2	0	0	Expenses, as per contra . . .	8	0	0
Shoeing . .	6	0	0				
	8	0	0	Carried to general account, p. 73.	12	0	0
PIGS.	£.	s.	d.		£.	s.	d
				Four sold again at 44s. each	8	16	0
				Carried to general account, p. 73			
POULTRY.	£.	s.	d.		£.	s.	d.
				Produce	7	0	0
Corn . .	3	0	0	Expenses per contra	3	0	0
				Carried to general account, p. 73.	4	0	0

Dr. TILLAGE. TILLAGE. Cr.

12 ACRES TURNIPS.	£.	s.	d.		£.	s.	d.
As in second rotation, p. 67	27	9	0	Eaten by sheep and carried to general account, p. 73			

12 Acres of OATS.	£.	s.	d		£.	s.	d.
See expenses p. 67				Profits as per p. 67 And carried to general account, p. 73	147	18	0

12 Acres of BEANS.	£.	s.	d		£	s.	d.
See expenses, p. 67				Profits, p. 67 Carried to general account, p.73	55	10	0

12 Acres of BARLEY.	£.	s.	d.		£.	s.	d.
Ploughing and harrowing at 10s. 6d. per acre.	6	6	0	Produce 60 qrs. at 40s.	120	0	0
Seed, 36 bushels, at 5s. per bush.	9	0	0	Straw	18	0	0
12 quarters hay seeds, at 10s. per qr.	6	0	0		138	0	0
3 quarters ray grass, at 40s. per qr.	6	0	0				
72 lb trefoil, at 6d. per lb.	1	16	0				
129 lb. white clover, at 1s. per lb.	6	0	0				
Rolling and bush-harrowing, 2s. 6d. per acre	1	10	0				
Weeding, 6d. per acre	0	6	0	Deduct expenses, per contra			
Harvesting, &c. 5s.	3	0	0		44	8	0
Thrashing, &c. 1s. 6d.	4	10	0				
	44	8	0	Carried to general account, p. 73	93	12	0

60 Acres meadow
92 ditto pasture

200 acres

GENERAL ACCOUNT.

Dr. Expenses.	£.	s.	d.	Profits.	£.	s.	d.	£.	s.	d.	Cr. £.	s.	d.
To rent	200	0	0	By Cattle, p. 71	124	7	6						
Poor's rate, &c.	45	0	0	Sheep	314	4	6						
Interest on capital	65	11	6	Horses	12	0	0						
Two day labourers	51	10	0	Pigs	8	16	0						
Man and boy (yearly)	16	10	0	Poultry	4	0	0						
Servant girl	9	10	0	Total by Live Stock							463	8	0
				12 acres of oats	147	18	0						
				12 ditto beans	55	10	0						
				12 ditto barley	93	12	0						
				Total profit of tillage				297	0	0			
				Deduct 12 acres of turnip expenses				27	9	0			
				Net profit on the tillage part							269	11	0
				Total profit of the farm							732	19	0
				Deduct expenses as per contra							385	1	6
	385	1	6	Net profit of the farm							347	17	6

The fourth and last calculation is made on the present system of summer fallows and sheep folding; it will be necessary to charge eight horses in it, and it may be observed the other systems require but six, owing to the more *judicious* and *better timed* method of ploughing,&c. It is very common to see eight horses in one plough, and scarcely ever fewer than four or six in this county. In this system there are *nine* ploughings to raise *four* crops, and in the new system there are only *five* ploughings to raise *five* crops; under these circumstances it may easily be supposed that six horses will do the work of the farm with much more ease than eight horses. I was informed by a very respectable and practical agriculturist in this county, that better crops were raised even in the old way from two ploughings than three. From the very strong work which the mares have to do, there is no possibility of raising foals, so that the horses are a dead weight on the farmer. In the value of the sheep too I have made a difference of 20*s.* a head in the ewes, and 10*s.* a head in the sheders, which I have great reason to think is rather under the real difference; this being the case, as it is supposed that seventy-five lambs are bred on the farm, it follows that as the sheep are worth less by 20*s.* a head, than those kept on turnips and rapes in the winter, as they are in the three former rotations, and as might be practised on all enclosed farms, that there is a certain loss of more than seventy pounds; but this is not all, for in accidental losses the sheep which are lost on seeds are, at least generally speaking, if properly observed, and taken in time, nearly worth their utmost value, while those which are folded being generally very *very* poor, are a total loss. Then in the process of pasturing sheep, on the sward land, and continually bringing all the dung from it, is such a robbery from the estate, and the dung being most part of it

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dropped on the highways, in driving the sheep backwards and forwards, that it is quite impossible to form any adequate idea of the loss occasioned by folding, and thus pasturing sheep. In produce I have been obliged to allow more than is really produced where sheep folding is practiced in this county to make the profits at all equal to the foregoing ones. I am very clear that were the methods I have described for the new system properly observed, the produce would in many seasons be much higher than I have calculated upon; from the smallness of the profit left for the farmer under this system to live upon, it will be proper to observe that the labour must be done cheaper than what it is rated at, or a livelihood could not be got. The farm of two hundred acres as before, being twenty-four acres in summer fallow, twelve acres of barley, twelve acres of beans, twelve acres of wheat, twelve acres of oats, in all seventy-two acres under the plough, sixty acres in meadow, and sixty-eight acres in pasture, which will keep one ewe per acre in winter, and the meadow one sheep per acre with the assistance of the hay, (for those sheep being folded all summer will be as I before observed very poor against winter;) then if seventy ewes are put to the ram, there will be seventy lambs for summer-stock, and thirty-five being supposed to be put into the pasture for folding, will be in all one hundred and seventy-five, there will be to sell thirty-five heder hogs, and thirty-five drape ewes. The stock of cattle will be seventeen head, of horses eight for draught, and one to ride, the account of which will stand as follows:

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HORSES.

	£. s. d.	£. s. d.
1 Horse for riding . . .	30 0 0	
8 ditto for draught .	200 0 0	
9		230 0 0

CATTLE.

		£. s. d.	£. s. d.
5 Cows	at 18l.	90 0 0	
3 Calves . . .	at 50s.	7 10 0	
3 One years old . .	at 5l.	15 0 0	
3 Two year olds .	at 7l. 10s.	22 10 0	
3 Three ditto . .	at 12l.	36 0 0	
17			171 0 0

SHEEP.

70 Ewes . .	at 30s.	105 0 0	
35 Shear hogs . .	at 25s.	43 15 0	
105			148 15 0
2 Pigs at 45s. each . . .			4 10 0
	Live stock capital .		554 5 0
	Dead stock as before .		120 0 0
	Total of Capital .		£674 5 0

At 8 per cent. as before is £53 18 9 see General Account.

Dr. LIVE STOCK.	£.	s.	d.	LIVE STOCK. Cr.	£.	s.	d.
KINE.							
5 Cows to the bull	0	12	6				
				2 fat calves at 4l. each	8	0	0
				3 beasts at 20l.	60	0	0
				Butter .	30	0	0
					98	0	0
				Deduct contra expenses	0	12	6
				Carried to general account, p. 80	97	7	6

Dr. TILLAGE. TILLAGE. Cr.

SHEEP.	£.	s.	d.		£.	s.	d.
Washing, shearing, &c. 105 at 5s. per score	1	6	3	35 Shear hogs at 25s. each	53	15	0
Hire of a ram	2	2	0	35 Drape ewes at 30s.	52	10	0
				21 Todds of wool, at 28s.	29	8	0
					125	13	0
				Deduct expenses as per contra	3	8	3
	3	8	3	Carried to general account, p. 80	122	4	9

HORSES.	£.	s.	d.
Shoeing	10	0	0
Carried to general account			

PIGS.	£.	s.	d.		£.	s.	d.
				8 Pigs at 30s.	12	0	0
Sow to the boar	0	2	6	Expenses per contra to deduct	0	2	6
				Carried to general account, p. 80	11	17	6

POULTRY.	£.	s.	d.		£.	s.	d.
				Produce	7	0	0
Corn	3	0	0	Expense per contra	3	0	0
				Carried to general account, p. 80	44	0	0

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Dr. TILLAGE LAND.				TILLAGE LAND. Cr.			
12 Acres SUMMER FALLOW.	£.	s.	d.				
3 times ploughing, 10s. 6d. each per acre	18	18	0				
Manure 144 loads at 10s. 6d. per load	75	12	0				
Carried to general account, p. 80 .	94	10	0				

12 Acres of BARLEY.	£	s	d.		£.	s.	d.
Ploughing, &c. at 10s. 6d. per acre	6	6	0	Produce 60 qrs. at 40s. per qr. .	120	0	0
Seed 36 bushels at 5s. per bushel . .	9	0	0	Straw .	18	0	0
Rolling, 1s. 6d. per acre	0	18	0		138	0	0
Weeding, 6d. per acre	0	6	0	Deduct expenses as per contra . .	24	0	0
Harvesting, 5s. per acre	3	0	0				
60 quarters thrashing, at 1s. 6d.	4	10	0				
	24	0	0	Carried to general account, p. 80	114	0	0

12 Acres of BEANS.	£.	s.	d.		£.	s.	d.
Ploughing, &c. 10s. 6d. per acre .	6	6	0	Produce 48 quarters at 44s. per qr.	105	12	0
Seed, 36 bushels, 5s. 6d. per bush. .	9	18	0	Straw .	18	0	0
Weeding and hoeing, 6s. per acre	3	12	0		123	12	0
Harvesting, 5s. per acre	3	0	0	Deduct expenses per contra . .	27	12	0
Thrashing, 48 quarters at 2s. per qr.	4	16	0				
	27	12	0	Carried to general account, p. 80. .	96	0	0

12 Acres SUMMER FALLOW.	£.	s.	d.
Sheep folded			

Dr. TILLAGE LAND. TILLAGE LAND. Cr.

Acres brought over

12 Acres of WHEAT.	£.	s.	d.		£.	s.	d.
Plowing, &c. 10s. 6d. per acre .	6	6	0	Produce 48 quarters, at 76s. per qr.	182	8	0
Seed, 36 bushels, at 9s. 6d. per bushel	17	2	0	Straw	18	0	0
Weeding, at 6d. per ac.	0	6	0		200	8	0
Reaping, 14s. per acre	8	8	0	Deduct expenses, as per contra . .	39	12	0
Harvesting, 2s. 6d. per acre .	1	10	0				
Thrashing, &c. 48 quarters at 2s. 6d. per qr.	6	0	0				
	39	12	0	Carried to general account, p. 80.	160	16	0

12 Acres of OATS.	£.	s.	d.		£.	s.	d.
Ploughing, &c. 10s. 6d. per acre .	6	6	0	Produce, 48 qrs. at 28s. per qr.	67	4	0
Seed, 60 bushels at 3s. 6d. per acre	10	10	0	Straw	18	0	0
Weeding, 6d. per acre	0	6	0		85	4	0
Harvesting, 5s. per acre	3	0	0	Deduct expenses as per contra .	23	14	0
Thrashing, &c. 48 qrs. 1s. 6d. per qr. .	3	12	0				
	23	14	0	Carried to general account, p. 80.	61	10	0

72 Acres.
60 Meadow.
68 Pasture.

200 Acres.

GENERAL ACCOUNT

Dr. Expenses.	£.	s.	d.	Profits.	£.	s.	d.	£.	s.	d.	£.	s.	d. Cr.
Rent	200	0	0	Cattle as p. 76.	97	7	6						
Poor's rate, &c.	45	0	0	Sheep, p. 77	122	4	9						
Interest on capital	53	18	9	Pigs	11	17	6						
Two daily labourers	54	10	0	Poultry	4	0	0						
Man and boy	16	10	0	Total profit of live stock				235	9	9			
Servant girl	9	10	0	Deduct shoeing of horses				10	0	0			
				Net profit of live stock							225	9	9
				12 acres of barley, p. 78	114	0	0						
				12 ditto beans	96	0	0						
				12 ditto wheat p. 79	160	16	0						
				12 ditto oats	61	10	0						
				Total profit of tillage				432	0	0			
				12 acres fallow to deduct				94	6	0			
									10				
				Net profit of tillage							337	16	0
				Total profit							563	5	9
				Deduct expenses per contra							373	8	9
	373	8	9	Net profit							189	17	0

A COMPARATIVE VIEW OF THE FOUR SYSTEMS.

Rotations.	Profits of each.	Difference between first and second.	Difference between first and third.	Difference between first and fourth.	Difference between second and third.	Difference between second and fourth.	Difference between third and fourth.
	£. s. d.						
First Rotation	700 14 0	71 5 9	352 16 6	510 17 0	281 10 9	439 11 3	158 0 6
Second ditto	629 8 3						
Third ditto	347 17 6						
Fourth ditto	189 17 0						

CHAP. V.

IMPLEMENTS.

SECT. I.—PLOUGHS.

THE sort of plough for paring was originally introduced from Holland, and has only one handle, from the hinder part of which projects a kind of crutch horizontally disposed, and upon this the holder bears with his left hand, walking upright; from the same handle another crutch projects at right angles with the former but much lower down; and this the holder uses occasionally with his right hand, for the purpose either of keeping the plough steady, or assisting to turn it at the land's end. Instead of a foot or wheel, to support the beam of the plough, they use what is called a scaife, which is a circular plate of iron, turning constantly round, the edges of which are steeled, and together with the edge of the share are kept very sharp, by means of a file which the ploughman carries with him for that purpose. This they call the whole Dutch, they have likewise what is called the three quarter Dutch,and the half Dutch; differing from the former in the breadth and strength of the share; these two latter are used for the seed furrow, as it is called, which means that ploughing upon which the seed if for cole-seed is brushed in, and if for white crops, harrowed in. The latter (i. e. the half Dutch) is used with a foot instead of a scaife, and is equally adapted for ploughing strong high land, on which it is frequently used near the fens.

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fens. The dimensions of a seeding plough are, length of the beam eight feet; length of the head one foot nine inches; height from the ground one foot; width behind nine inches and a half. At Chesterton the Leicestershire wheel ploughs are in use. At Elton a double furrowed plough has been used. At Hartford the Rotherham has come into use, and is infinitely preferred to the ploughs generally in use in this county. At Kimbolton, the Northumberland plough has been introduced by his grace the Duke of Manchester.

Overton Longville, a double furrow plough used.

Pidley, a double furrow plough has also been used at this place.

At St. Neot's, trials have been made by very ingenious farmers with the Norfolk, Northumberland, Scotch, Essex, Staffordshire, and Hertfordshire ploughs, which last is said to be the worst among them.

At Somersham, and some other parts of the county, besides the ploughs which I have described at the beginning of this section, the mole plough has been used for draining.

At Upwood, the double plough has been used and much approved. The price of the Dutch plough, as given me at Coln, is 21*s*. The common swing plough is the original plough of Huntingdonshire.

SECT. II.—HARROWS.

NOTHING peculiar under this head was met with in the county, the common harrows being in general use.

SECT. III.—ROLLERS.

SQUARE rollers made of very light wood are in use at Somersham.

SECT. IV.—DRILLS

ARE used in several parishes, and though several on different constructions have been tried at Haile Weston, yet they have been found to work with great difficulty.

SECT. V. AND VI.—HORSE-HOES, SCARIFIERS,

ARE in use in this county, but there is nothing novel in their construction.

SECT. VII.—THRASHING-MILLS.

At Hartford there are two, one by Ball very much approved; the other by Leicester; the former is a four-horse power, thrashes one hundred and eighty bushels in nine hours, and cost 75*l.*; the latter is a one-horse power thrashes twenty-five bushels in nine hours, and cost 61*l.* 19*s.*

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At St Ive's there is one, made by Ball, a four-horse power, does its work well, and costs 78*l.* 15*s.*

At Somersham, there is one made by Yellowley; a person named Spalding had one of those machines in agitation, which had a very promising appearance, and I have no doubt will prove a very great improvement upon them; I therefore beg leave to recommend him to the attention of the Honourable Board, and the public.

At Southoe, there are two, one by Ball, the other by Muir.

SECT. VIII.—WAGGONS AND CARTS.

On all farms in the highlands, these are used in common as occasion may require, but there is nothing particular in their formation: on the farms in the fens or low lands, no carts are used but light waggons, which are drawn by two mares abreast with a pole, one side of the waggons being made of loose boards which are taken out, to empty them, when wanted for the carriage of dung.

SECT. IX.—WINNOWING MACHINES.

There are some on a very improved principle at Somersham, and very superior to most in general use, made by Wilson of Lynn Regis, Norfolk. There is nothing worthy of notice in implements in his county, or at least such as came under my observation.

On the subject of implements Mr. Scott observes that there is nothing so excellent in the common implements of husbandry used in this county, as to merit recommendation to others, nor so very defective as to deserve much censure.

The waggons, carts, ploughs, harrows, and rolls are improving; and in time will be as good as in most other neighbouring counties; and the thrashing machines, drill machines, dressing machines, and scufflers, are in general of the common construction.

There is a new thrashing machine invented by an ingenious watchmaker of a small portable size, worked by two men, and it does the work well, but goes too heavily at present; with some alterations it would probably go easier, and answer on small farms.

Mr. Scott strongly recommends drill rollers, to be used in sowing grain on fen land. Those now used in Norfolk and some of the highland parts of this county, are much too heavy for the very light fen soil. If a very light roller were adopted in the fens, it would prove extremely useful, as it would make the land more solid; and the crops by proper hoeing might be kept clear of weeds.

CHAP. VI.

ENCLOSING.

SECT. I.—HURSTINGSTONE HUNDRED.

AS the great utility, and vast importance of enclosing valuable waste lands, is now generally admitted, and is very much practised in most counties, it is needless to enlarge upon it here; especially as most of the best commons in the county are now enclosed, except in the parish of Bluntisham and Earith, where some fine soil commons still lie in a barbarous state, exhibiting in the strongest points of view the effects of prejudice, when they are compared with the adjoining commons of Somersham and Wood Hurst, which have been enclosed only a few years, and already display a delightful appearance; being ornamented with beautiful thriving thorn-hedges and young trees, and covered with as fine crops of grain and grass, as almost any land in the British empire.

Bluntisham—Open fields, some small enclosures of from two to ten acres which are divided by quick thorn fences, with elm and oak timber in the rows.

Broughton—Has been enclosed ten years, and is divided into fields of from fifteen to thirty acres, by quick fences, having no timber.

Bury—More than four-fifths of this parish are enclosed, the highlands by quick hedges without timber, and the fens by ditches, into fields, of from four to ten, and twenty acres.

Coln—

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Coln—Part enclosed and part not, that part which is enclosed is divided into fields of from four to ten acres, in the highlands by quicks, and in the fens by ditches.

Hartford—Enclosed and divided by quick hedges with small quantities of elm timber in them, into fields of from six, ten, to twenty acres.

Houghton—Has been enclosed thirty-two years, and is divided by quick hedges, without timber, into fields of from four to ten, and twenty acres.

Huntingdon—Enclosed and divided by quick-thorn fences, with a little elm and oak timber in the rows, into fields of two, ten, and twelve acres.

Needingworth—Enclosed and divided by quick-thorn edges, with elm and ash timber in them, into fields of from ten to twenty acres.

Old Hurst—Has been enclosed four years, by quick-thorns into fields, of from four to twenty acres.

Pidley—Enclosed and divided by quick hedges with elm, ash, and oak timber in them, into fields of from ten to thirty acres.

Ramsey—Enclosed and divided in the highlands by quick hedges, with a little elm, ash, and oak, and in the fens by ditches, into fields, of from ten to forty acres.

Raveley Magna and Parva—Are enclosed and divided by quick hedges with ash, elm and oaks in them, into fields of from seven, ten, twenty, twenty-five, thirty, and forty acres.

Ripton Regis—Enclosed thirty years ago, and divided by quick fences, with a little ash, elm, and oak timber in them, into fields of ten, twelve, and forty acres,

Ripton Abbots—Enclosed and divided by quick thorn fences, with a great quantity of elm, ash, and oak timber in them, into fields nf from ten to thirty acres.

Saint Ives'—Enclosed by quick hedges with very little timber in them, into fields of from ten to thirty acres.

Somersham—Enclosed in the highlands by quick hedges, and in the fens by ditches, into fields from ten to thirty acre fields.

Stewkley Magna—About one-third of this parish is enclosed by quick hedges, with great plenty of elm and ash, and a small quantity of oak in them, into fields of from four to fourteen acres.

Stewkley Parva—Enclosed thirty-four years ago, by quick thorns with a little ash and elm timber in the rows, into fields of from ten to twenty-five acres.

Upwood—Principally open fields, some small enclosures of from two to ten acres, with quick-thorn fences.

Warboys—Enclosed by quick thorn hedges, into fields of from six to twenty acres.

Witton—Enclosed by quick thorn fences into fields of from five, ten, twenty, and twenty-five acres.

Wistow—Open-fields.

Woodhurst—Enclosed by quick hedges with ash and elm timber, into fields of from six, ten, twenty to twenty-four acres.

SECT. II.—LEIGHTONSTONE HUNDRED.

Alconbury—Enclosed fourteen years since by quick thorns, with a small quantity of timber in the rows, into fields of from ten to fifty acres.

Barham—Enclosed twenty-six years since by quick thorns, and has some beautiful elms in the rows, into fields of from two to thirty acres.

Brampton—Enclosed thirty years ago, with quick hedges, and a little timber in the rows, in fields of from ten to twenty, and fifty acres.

Brington—Enclosed by quick hedges into fields of from two to ten and forty acres.

Buckworth—Enclosed by quick hedges with great quantities of ash, elm, and oak timbers in them, into fields of from ten to eighty acres.

Bythorne—Enclosed by quick hedges, with a little timber, into fields of from four to eighteen and twenty acres.

Catworth—Enclosed by quick hedges, with a little elm and ash, into fields of from two to fifty acres.

Covington—The same as Catworth, except that the fields extend to thirty acres only.

Easton and Ellington—Enclosed by quick hedges, with a little elm, ash, and oak timber in the rows, into fields of from two roods to three, twenty-five and thirty acres:

Gidding Magna—Only one-fifth of this parish is enclosed, which is divided by quick-thorn hedges, with ash timber in the rows, into fields of from four to fifty acres.

Gidding Parva—Has been enclosed three hundred and six years, by quick hedges, with a little timber in the rows, into fields of from five to thirty-six acres.

Graffham—Enclosed thirty years ago, by quick thorn fences, with a great quantity of ash, elm, and oak in the rows, into fields of ten, twenty, and twenty-five acres.

Hamerton—Enclosed by quick hedges with a small quantity of timber in them, into fields of from six to thirty-five acres.

Keystone—Two open field farms, the remainder of the parish has been enclosed three hundred years, by quick thorn-hedges with a little timber, into fields of from one to fifty acres.

Kimbolton—Has been enclosed thirty years by quick hedges, having great plenty of oak, ash, and elm timber in the fields of from three to thirty acres.

The park here, the seat of the Duke of Manchester is most beautifully wooded, having some elms, supposed to be the highest in England, being to be seen at the distance of twenty-eight miles.

Leighton Bromswold—Enclosed thirty years since by quick hedges, much ornamented with ash, elm, and oak, into fields of from two to forty acres.

Long Stow—Open fields, wooded about the town with oak, ash, and elm.

Luddington—The same as Long-Stow.

Molesworth—Enclosed by quick-thorn hedges, but no timber, into fields of from two to thirty acres.

Old Weston—Chiefly open fields, some small enclosures of from two to twelve acres, with quick-thorn fences, and timber in the rows.

Spaldwick—Enclosed thirty years by quick fences, with very little timber, into fields of from three to fifty acres.

Steeple Gidding—Enclosed by quick fences and well timbered, into fields of from six to thirty-five acres.

Swineshead—Open fields but well timbered.

Thurning—Open fields.

Upton—Open fields, some elm and ash timber about the town.

Winwick—Enclosed by quicks, but no timber, into fields of from five, ten, fifteen, and thirty-five acres.

Wooley—Enclosed thirty-four years since, with quick-thorn fences, and a little timber in the rows, into fields of from two to thirty-five acres.

SECT. III.—NORMAN CROSS HUNDRED.

Alwalton—Enclosing this year.

Caldecot—Enclosed by quick thorns with a little timber, into fields of from six to seventy acres.

Chesterton—The same as Caldecot, fields from six to twenty acres.

Conington . . . ditto . . . fields from ten, forty, to one hundred acres.

Denton . . . ditto . . . fields from two, twelve to twenty-five acres.

Elton . . ditto . . fields from one to thirty acres.

Farcet—Enclosed by quick hedges without timber, into fifteen, eighteen and twenty acre fields.

Fletton—Enclosed forty-four years by quick hedges with a little timber, into fields of from four to twenty acres.

Folksworth—The same as Fletton, fields from nine, fourteen, eighteen to twenty acres.

Glatton—Chiefly open fields.

Haddon—Enclosed by quick-thorn fences, with ash and elm in the rows, into fields of from two, fifteen, sixty to seventy acres,

Holme—Enclosed by quick-thorn hedges with a little timber in them, into fields of from six to twenty acres.

Lutton—Open fields, except five acres, three hundred and ninety-seven acres of this parish are in Huntingdonshire, and nine hundred and three in Northamptonshire.

Morborn—Enclosed by quick-thorn fences with a little timber in the rows, into fields of from ten, twenty, to fifty acres.

Overton Waterville—Enclosing this year.

Overton Longville—Enclosed seventy years since, with quick thorn fences, having plenty of elm, and oak in the rows, into fields of two, twenty, and seventy acres.

Sawtry St. Andrews—Enclosed last year with quick-thorn hedges, into fields of ten and twenty acres.

Sawtry St. Judith—Enclosed by quick thorns, and well timbered, fields, five to fifty acres.

Standground—Enclosed by quick thorns, no timber, fields one to thirty acres.

Stebbington with Sibson—Open fields.

Stilton—Enclosing this year.

Water Newton—Enclosed with quick thorns, with ash and elm timber in the rows, into fields of from five to thirty acres.

Woodstone—Open fields, timbered with oak, ash, and elm.

Wood Walton—Enclosed with quick-thorn fences, fields six, ten, and twenty acres.

Yaxley—Enclosed by quick thorn hedges, and a little timber in the rows, into fields of from one, ten, and twenty acres.

SECT. IV.—TOSELAND HUNDRED.

Abbotesley—Open fields, timbered with ash, pollards, and elm.

Buckden—About seven hundred acres of this parish only are enclosed into fields of from two to ten acres, by quick-thorn hedges, and well timbered.

Doddington—Enclosed nine years with quick-thorn hedges, and elm and ash timber in the rows, into fields of from twenty to thirty acres.

Eynsbury—Enclosed nine years by quick hedges, into from eight to seventy acre fields.

Everton—Open fields, prettily wooded.

Fenny Stanton—Enclosed by quick-thorn hedges, fields from five, ten to thirty acres

Godmanchester—Enclosed by quick-thorn hedges, fields from four to twenty acres.

Gransdon—Open fields, timbered with elm and ash.

Graveley—Enclosed by quick thorn hedges, into fields of ten, twenty, and twenty-five acres.

Haile Weston—Eight hundred acres, enclosed by quick thorns and elms in the rows, into fields of from sixteen to twenty acres.

Hemingford Grey and Abbots—Enclosed by quick thorns, (the latter timbered with oak, ash, and elm) into fields of four, ten, twenty, and fifty acres.

Hilton—Open fields.

Offord Cluny—Enclosed with quick-thorns, into fields of eighteen and thirty acres.

Offord D'Arcy—800 acres only enclosed, by quick-hedges with great numbers of ash pollards, into fields of ten and twenty acres.

Papworth—Half the lordship enclosed by quick-thorn hedges, with much timber in the rows, into fields of ten, twenty,and forty acres.

Paxtons—Open fields, some small enclosures with elm timber.

Perry—Half enclosed, and half open fields, enclosures from ten to forty acres.

St. Neot's—Has been enclosed thirty,six years with quick hedges and elms, into fields of from ten to fifteen acres.

Southoe—Enclosed with quick hedges, having a small quantity of timber in the rows, into fields of from six to fifty acres.

Stoughton—Now enclosing.

Toseland—Principally open fields.

Warsley—Open fields, well wooded with ash, elm, and oak.

Yelling—Open fields, except some small enclosures of from two to ten acres.

More than two-thirds of this county are enclosed, and from several parishes being enclosing this year, it will be observed, that this very meritorious spirit of improvement is by no means on the decline, which is highly gratifying to any one possessing or at all valuing the welfare of his county; for it is by enclosing alone, properly attended to in all its stages, that agricultural improvements can be effected, and upon improved agriculture, the country can alone rely for rendering the taxes unavoidably imposed by the state, easy and light.*

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* Mr. Scott mentions, that Mr. John Ashton of St. Ives was shewing him a close where he had planted a white-thorn hedge eight or ten years before; but it grew very slowly, although he kept it very clean, and it was well guarded with posts and rails, and he mucked it very frequently; but it was a hot burning soil. Whereupon Mr. Scott advised him to put clay to the young thorn plants instead of muck, and cut them down, which he did, and they have continued in a healthful thriving state ever since.

CHAP. VII.

ARABLE LAND.

SECT. I.—TILLAGE.

Abbotesley—Plough two or three times, and a seed ploughing, with from four to six horses, and a driver.

Alconbury—Plough four times and a seed ploughing, with three, four, six or eight horses, and a driver.

Alwalton—Ploughing done with three, four, six, and sometimes eight horses.

Barham—Ploughing with from three to six horses.

Bluntisham—Plough three times for wheat, barley, or turnips, with four horses.

Brampton—Plough with two horses abreast, and six horses, and a driver.

Brington—Plough with three or four horses, and a driver.

Broughton—Plough with from two to six, according to situation, &c.

Buckden—Plough with three or four horses and a driver, plough three times and a seed plough.

Buckworth—Plough with three horses and a driver.

Bury—Plough three or four times, and a seed ploughing, with three, four, or six horses.

Bythorne—Ploughing by four horses, and a driver.

Catworth—Ploughing by two, four, or six horses, and a driver.

Caldecot—Plough by four, five, six horses, and a driver.

Chesterton—The same.

Coln—Ploughing by two, three, or four horses, and a driver.

Conington—Ploughing by three or four horses, and a driver.

Covington—The same.

Denton—Ploughing from four to six horses, and a driver.

Doddington—Ploughing for fallows by four horses, and a driver, for others two horses.

Easton—Ploughing done by four horses, and a driver, plough three times and a seed ploughing.

Ellington—Ploughing done by three or six horses, and a driver, plough three times and a seed ploughing.

Elton—Ploughing done by three or four horses, and a driver, plough three times and a seed ploughing.

Everton—Ploughing by three horses, in a dry time by six horses.

Eynsbury—For fallows by four or six horses, and a driver, three horses for stirring.

Farcet—Ploughing by three horses, but all the summer by eight horses for fallowing.

Fenny Stanton—By six horses and a driver for fallowing, two horses for stirring.

Fletton—By three or four horses, and a driver.

Folkesworth—By three or four horses, and a driver generally, but sometimes by six horses and driver.

Gidding Magna and Parva—By three, four, six horses and a driver, plough three times and a seed ploughing.

Glatton—By four or six horses, and a driver.

Godmanchester—By four horses for fallowing, by two or three horses for stirring.

Graveley—By four or six horses for fallows, and by two horses for seed ploughing.

Graffham—By six horses for fallows, and by two for seed ploughing.

Gransdon—By four or six horses, and a driver for fallowing, and three horses for stirring.

Haddon—By three or four horses, and a driver.

Haile Weston—By four horses and a driver for fallowing, by three horses for stirring.

Hamerton—By eight horses and a driver for fallowing, by three or four horses for stirring.

Hartford—By four or six horses, and a driver for fallows, and two horses for stirring.

Hemingford Grey—By two horses abreast, and three horses single.

Hemingford Abbots—By four horses, and a driver.

Hilton—Four or six horses, and a driver for fallowing; by two or three horses for stirring.

Holme—By three or four horses, and a driver.

Houghton—By four horses abreast, and three single, and a driver.

Keystone—By six or eight horses, and a driver for fallowing; and three or four for stirring.

Kimbolton—By six horses, and a driver, for fallowing.

Leighton Bromeswold—By three or four horses, and a driver.

Long Stow—By four horses and a driver; plough four times, and a seed ploughing.

Luddington—By six horses, and a driver for fallowing.

Lutton—By four or six horses, and a driver for fallowing.

Molesworth—By six horses, and a driver for fallowing, by four horses for other purposes.

Morborn—By three or four horses, and a driver.

Needingworth—By four or six horses, and a driver, plough three or four times; and a seed ploughing.

Offord Cluny—By four horses, and a driver for fallowing, and by two horses for any other work.

Offord D'Arcy—By four horses, and a driver for fallowing, and two or three horses for stirring.

Old Hurst—By four horses, and a driver for fallowing, plough three times, and a seed ploughing.

Old Weston—By three or four horses, and a driver for a fallow.

Overton Longville—By three or four horses, in a swing plough, and five in the double-furrowed plough and drivers.

Overton Waterville—By eight horses, and a driver for fallows, by three or four horses for all other purposes.

Papworth—By two or three horses generally, but in a dry time by four horses and drivers.

Paxton Magna—By four or five horses, and a driver for fallows, by two or three afterwards.

Paxton Parva—By four horses, and a driver for fallows, by two for stirring.

Perry—By four horses, and a driver for fallows, plough two or three times, and a seed ploughing.

Pidley—By two, three, four or six horses and a driver, plough four times for wheat, and five for barley.

Ramsey—By two or three horses, without a driver.

Raveley Magna—By three horses single, and a driver, and four horses abreast, and drivers.

Raveley Parva—By four horses single, and a driver, and four horses abreast, and drivers.

Ripton Abbots—By four horses, and sometimes six horses for fallow, by two or three for stirring.

Ripton Regis—By three or four horses single or double, and a driver.

Sawtry St. Andrew's—By six horses for fallows, by three or four at other times.

Sawtry St. Judith's—By six horses for fallows, by three or four at other times.

St. Ive's—By two or three horses at length and a driver, plough three times and a seed ditto.

St. Neot's—By one horse for turnips and barley, by two or four for fallows.

Somersham—By three horses abreast, and a driver, plough three times for fallow.

Southoe—By three horses abreast, and a driver, plough three times for fallow.

Spaldwick—By two or four horses, and a driver, plough four times.

Standground—By four horses for fallow, by three for seed-ploughing, and drivers.

Stebington—By three or four horses, and a driver, plough three times, and a seed ploughing.

Steeple Gidding—By three, four, or eight horses, and a driver.

Stewkley Magna—By three horses single, four and six double for fallows, and a driver.

Stewkley Parva—By three horses and a driver generally, Mr. Nichols by two horses.

Stilton—By four or six horses for fallows and drivers.

Stoughton—By four horses for fallows, by two or three horses at other times.

Swineshead—By three or four horses and a driver.

Thurning—By four or six horses and a driver.

Toseland—By four horses and a driver for fallowing, and three for stirring.

Upton—By three or four horses and a driver.

Upwood—By three or four horses and a driver, plough three times and a seed ploughing.

Warsley—By four horses and a driver for fallows, and three to stir land.

Warboys—By six horses and a driver for fallows, and three to stir land, plough three times, and a seed ploughing.

Water Newton—Mr. Compton ploughs with two or three horses and a driver, others with three or four horses and a driver.

Winwick—By two, three, four, five, six or eight horses and a driver, plough three times and a seed ploughing.

Wistow—By four horses and a driver for fallows, by two abreast to stir land.

Witton—By four abreast, and three single and drivers.

Woodstone—By four horses and a driver for fallows, by two for stirring land.

Wood Walton—By six or eight horses and a driver, by three for stirring.

Wood Hurst—By four or six horses and a driver for fallows, plough three times, and a seed ploughing.

Wooley—By three or six horses and a driver.

Yaxley—By four or six horses and a driver.

Yelling—By two, three, four horses, and a driver.

SECT. II.—PLOUGHING.

It may be seen by recurring to the foregoing pages on this subject, that in some places it is done by pairs of

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horses abreast, and by three abreast in the fens, where the men are very expert at ploughing, never having a driver, but guiding their horses by a line; it is said that a fen ploughman has been known to win a considerable wager by ploughing an acre of high land without a single balk, keeping his mares always in a trot, even at the land's end, those being the two conditions of the bet; a proof not only of his own expertness, but that his plough was constructed upon true principles of mechanics. On strong land for the first ploughing four horses at length, and a driver are generally used, and in some instances *six* or *eight* horses and a driver, this is for *summer fallowing*, which the reader will please to observe is what is intended, wherever the word *fallows* or *fallowing* occurs. In a former report drawn up for the consideration of the Board, by a very able and intelligent gentleman, I observe deep ploughing is recommended for green crops; in this I fully agree with him, as by ploughing deep, moisture is retained, which is always wanted for turnips, cabbages, cole-seed, &c. and as this process is always attended with three or four ploughings, and takes place in the summer, and as every ploughing loses depth, the first ploughing should be as *deep* as the soil will admit, not to break up the *understratum* which is formed by nature for the plough to rest upon. Vegetable matter is supposed by many agriculturists to sink downwards, when the fact is directly opposite to such a supposition, and is contrary to nature. Vegetable matter going off by exhalation, ploughing *deeper* than the upper stratum allowed, has been known to reduce the fertility of the soil so much, that the crops have a very long time been much worse though the land was highly dunged; indeed where the understratum has been of a poor loose wet sand, of a hot poor gravel, a sort of yellow clay, or any sort of clay with much sand in it, the effects of deep ploughing have been so baneful, that the soil has scarcely been to be brought again to its former fertility. The only soils which ought to be ploughed deep are lands with a stony bottom, which seldom will admit of the plough going *deeper than it ought to do*, and any proportion of stones which are thus raised to the surface, on that kind of land is highly advantageous to all crops, from not only preventing exhalation, but causing the putrefaction of the vegetable substance contained in such soils. Green crops of all kinds require much deeper soils than white crops, and being generally grown on fallowed lands, as much vegetable matter ought to be raised under that process as possible; the *calcareous* matter raised up by ploughing deep being much heavier than *vegetable* substance, keeps *settling downwards*, and has a proper time to find its natural *resting place* or home from whence it came. Deep ploughing (by which I mean to be understood as speaking of *ploughing deeper than the upper stratum admits*), is only to be commended, where it is intended to plant trees: for as the roots of trees seek their nourishment by extending their fibres *downwards*, deep ploughing in this case adds to the moisture of the ground, caused by the good soil being turned *underneath*, and the calcareous soil being brought to the surface, thus excluding the powerful effects of sun and wind. Any *extreme depth* of ploughing for *farming* purposes, I cannot recommend, on the contrary, well knowing its very pernicious tendency, must caution every farmer against it. I shall only now observe that I have been led into the foregoing remarks on deep ploughing, not with a wish to oppose what has been stated in the former report, for as it will be seen I agreed with the statement of *deep ploughing* being necessary for all green crops, but from thinking the term deep ploughing was rather too *indefinite*, and might thus cause a mistake in a farmer's proceedings, in that respect where I am confident none was intended; to obviate this I have endeavoured to shew the proper depth for ploughing, and what I believe was intended by the ingenious author of the former report; further observations on ploughing will be found in Chap. XIV, Sect. first and third.

Harrowing, is done by joined or single harrows, with pairs of horses, and sometimes three horses at length.

Rolling is done in this county by light wood rollers.

Scarifying is very little practiced.

Ridges, I saw none but for wheat, nor did I see any crops put in without ploughing.

Drilling is not a general practice.

Handhoeing is practised for turnips and bean crops; horse-hoeing is not practiced.

SECT. III.—FALLOWING.

SUMMER fallows are practised, and said to be essentially necessary, over all this county, with the exception of the following parishes.

At Broughton—Fallowing said to be unnecessary, being better to sow tares instead of it. At Buckden and Conington—Summer fallows not necessary. Haile Weston—The system of summer fallows might be abolished, were the open-fields enclosed. Hemingford Grey and Abbots—Summer fallows unnecessary and very improper. Huntingdon and Kimbolton—Summer fallows unnecessary. Morborn and Overton Longville—Summer fallows unnecessary. Paxton Magna—Summer fallows not necessary, seeds might be substituted for that purpose. Ramsey and St. Neot's—Summer fallows not necessary. St. Ives'—Rapes or tares instead of summer fallowing. Somersham, Stebington, and Stewkley Magna—Summer fallows not necessary. Stewkley Parva—Summer fallows not necessary on dry land, but very necessary on the strong land, more barley by two quarters per acre being grown where it is practised. By the above account it will appear that very little more than one-sixth part of the county disapproves of the practice of summer fallows, and from the strong-rooted bias which farmers have in this county, especially for this which I must call an abominable practice, it will be long ere the system is banished, notwithstanding the very obvious benefits of so doing. It would be easy to expatiate on this head, but as a very intelligent reporter has observed that, " all such observations are equally applicable to every part of the kingdom," I pass on to the next section of this chapter.

SECT. IV.—COURSE OF CROPS.

ABBOTSLEY. Summer fallows, wheat or barley, oats, beans or pease.

Alconbury. Summer fallows, barley, clover or beans, then wheat.

Alwalton. Summer fallow, wheat or barley, beans or pease.

Barham. Summer fallows, barley, clover or beans, wheat.

Bluntisham. Summer fallows, beans, wheat, some sow tares, or turnips, barley, beans, wheat.

Brampton. On gravel land, turnips, barley, clover, pease or wheat on clay soils. Summer fallow, wheat, beans.

Brington. Summer fallow, wheat or barley, then beans.

Broughton. Summer fallow, barley, seeds for two years, pease or beans.

Buckden. Summer fallow, wheat or barley, pease or oats.

Buckworth. Summer fallow, barley or oats, clover or beans.

Bury. Summer fallow, wheat or barley, beans or oats.

Bythorne. Summer fallow, wheat or barley, beans, wheat, this is on woodland ; on other soils,summer fallow, barley,red clover, and ray-grass, which lies as long as the tenant chuses, beans and then wheat.

Catworth. Summer fallow, barley, beans or clover, then wheat.

Caldecot. Summer fallow, barley, beans or clover, wheat.

Chesterton. On scaly land, summer fallow, barley, clover, (mown) wheat, which is generally mildewed. On clay soils, summer fallow, wheat, beans or clover for pasture.

Coln. Summer fallow, wheat, barley, beans.

Conington. On highland, summer fallow, wheat or barley, beans or oats ; on fen land, pare and burn for rape seed, oats, clover for two years, then plough up again.

Covington. Summer fallow, wheat or barley, wheat or tares.

Denton. Summer fallow, wheat or barley, beans, then sometimes oats, after the barley some have clover, sometimes mown twice, and sometimes eaten.

Doddington. On clay lands, summer fallow, wheat, barley, pease or beans, oats ; on gravel, turnips, barley, clover or pease, wheat ; or as is sometimes practised on clay soils, summer fallow, wheat, clover or beans, wheat.

Easton. On clay,summer fallow,wheat or barley, clover,wheat, beans ; on light lands, summer fallow, wheat or barley, beans.

Ellington. Summer fallow, barley, clover or beans, wheat.

Elton. Summer fallow, barley, seeds for two years, beans, wheat ; on turnip lands, the same course, except taking oats instead of beans.

Everton. Summer fallow, wheat or barley, beans, pease or oats.

Eynsbury. Summer fallow, wheat or barley, clover, wheat, sometimes pease, beans or oats.

Farcet. Summer fallow, barley, beans or clover, wheat.

Fenny Stanton. On sand and loam, turnips, barley, clover and wheat ;

wheat; on strong clays, summer fallow, wheat, beans, and then sometimes barley and clover.

Fletton. Summer fallow, wheat or barley, beans.

Folkesworth. Summer fallow, barley, clover, or beans, wheat.

Gidding Magna. Summer fallow, wheat or barley, beans.

Gidding Parva. Summer fallow, wheat, oats or beans.

Glatton and Godmanchester. Summer fallow, wheat or barley, beans.

Graveley. Summer fallow, wheat or barley, beans or oats.

Graffham. Summer fallow, barley, clover or beans, wheat.

Gransdon. Summer fallow, wheat and barley, pease and beans or oats.

Haddon. Summer fallow, barley or oats, clover or beans, wheat.

Haile Weston. Summer fallow, wheat or barley, oats or beans.

Hamerton. Summer fallow, barley, rye grass or red clover for two years, beans, wheat.

Hartford. Mr. Butt sows barley, clover, wheat, others summer fallow, wheat or barley, beans.

Hemingford Grey. On clay lands, summer fallow, wheat or barley; on gravel lands, summer fallow, wheat, barley, clover, wheat.

Hemingford Abbots. Summer fallows, barley, clover, wheat, beans, turnips, barley, clover, wheat.

Hilton. Summer fallow, wheat or barley, beans or oats.

Holme. Summer fallow, wheat or barley, beans or oats.

Houghton. Summer fallows, wheat or barley, clover, wheat, pease or beans.

Keystone. Summer fallows, wheat or barley, beans.

Kimbolton. Summer fallow, wheat or barley, beans or oats, sometimes after the bean crop, wheat, oats or barley.

Leighton Bromeswold. Summer fallow, barley, beans, wheat.

Long Stow. Summer fallow, wheat or barley, beans; or summer fallow, barley, beans, wheat, the system changed every six years.

Luddington, Lutton, and Molesworth. Summer fallow, wheat or barley, beans.

Morborn. Summer fallow, cole or rape eaten off by sheep, barley, clover mown, wheat, beans.

Needingworth cum Holywell. Summer fallow, wheat or barley, clover or beans, wheat.

Offord Cluny and D'Arcy. Summer fallow, wheat or barley, beans or oats.

Old Hurst. Summer fallow, wheat, beans.

Old Weston. Summer fallow, wheat or barley, beans.

Overton Longville. Turnips, barley, clover or beans, wheat.

Overton Waterville. Summer fallow, wheat or barley, beans.

Papworth. Summer fallow, wheat, beans or oats.

Paxton Magna. Summer fallow, wheat, pease and beans, or oats.

Paxton Parva. Clay, summer fallow, wheat or barley, oats or pease, others summer fallow, turnips, barley, oats or pease.

Perry. Summer fallow, wheat or barley, clover, pease and beans, oats.

Pidley. Summer fallows, wheat or barley, beans or tares is one course, summer fallow, wheat, barley, beans, oats.

Ramsey. Cole-seed, wheat or oats or barley, ray grass and clover for two years.

Raveley Magna. Summer fallow, wheat or barley, clover or beans, and then sometimes wheat, or wheat instead of beans.

Raveley Parva. Summer fallow, wheat or barley, beans or oats.

Ripton Abbots. Summer fallow, wheat or beans, barley for strong clay soils; cole-seed, oats, or barley or pease for woodlands, and answers very well.

Ripton Regis. Summer fallow, wheat or barley, beans or oats.

St. Ive's. Summer fallow, wheat or barley, beans.

St. Neot's. Turnips, barley, beans, wheat, some only sow two crops, and then summer fallow, being compelled to it by leases.

Sawtry St. Andrew's. Summer fallow, wheat or barley, beans; others, seeds two years, beans, wheat, fallow for barley, then seeds.

Sawtry St. Judith. Summer fallow, wheat or barley, beans; others pursue the same system as at Sawtry St. Andrews.

Somersham. Pare and burn, cole or rape seed, oats, ray grass two bushels per acre, then take up again.

Southoe. On sand, turnips, barley, clover, or pease or tares; on clays summer fallow, wheat or barley, then fallow for barley, then seeds for four years, then fallow again, which is said to be very advantageous.

Spaldwick. Summer fallow, barley, clover, wheat, beans.

Standground. Summer fallow, barley, clover, wheat, beans.

Stebbington. Turnips, barley, pease or beans; summer fallow, wheat.

Steeple Gidding. Summer fallow, barley, clover and ray-grass two years, beans or wheat.

Stewkley Magna. Summer fallow, wheat or barley, beans.

Stewkley Parva. Some, turnips, barley, clover, wheat; others summer fallow, wheat, beans.

Stilton. Summer fallow, wheat, beans, barley.

Stoughtons. Summer fallow, wheat or barley, beans or oats.

Swineshead. Summer fallow, wheat or barley, beans and pease, or oats.

Thurning. Summer fallow, wheat or barley, beans.

Toseland. Summer fallow, wheat or barley, pease and beans or oats.

Upton. Summer fallows, wheat or barley, beans or oats.

Upwood. Summer fallow, wheat or barley, beans.

Warboys. Summer fallow, wheat or barley, beans.

Warsley. Summer fallow, wheat or barley, beans or oats, or tares.

Water Newton. Turnips, barley, clover mown, wheat or turnips, barley, pease, wheat.

Weston. Summer fallow, wheat or barley, beans or oats.

Winwick. Summer fallow, barley, seeds for two years, beans, wheat.

Witton. Summer fallow, wheat or barley, clover, pease or beans.

Woodstone. Turnips or cole, barley, beans, wheat, for gravel or sand; summer fallow, wheat, beans for clay soils.

Wood Walton. Summer fallow, wheat or barley, beans.

Wood Hurst. Summer fallow, barley, clover, wheat; if the clover lays longer than one year, then beans are sown.

Wooley. Summer fallow, barley, clover, wheat.

Yaxley. Summer fallows, wheat, beans, barley, seeds for four years, beans, wheat.

Yelling. Summer fallow, wheat or barley, beans or oats.

The following remarks were made by the author of the former report (Mr. Maxwell) on this subject.

"The system I would recommend is this: one-half or two-thirds of the land to be always in grass, or a still greater proportion where the soil is better adapted to grazing than to ploughing, the remainder to be kept in tillage in the following divisions and successions of crop.

"1st, Clean deep winter and spring ploughing for a vegetable crop, of whatever kind is best suited to the soil, as turnips, tares, or cole-seed; this is to be hoed, but not to stand for seed.

"2d, A crop of white corn, of whatever kind is best suited to the soil, and with this clover 20 lbs. per acre.

"3rd, Clover either grazed or mown, but not to stand for seed.

"4th, Beans, sheep fed* and hoed, or some other meliorating crop suited to the soil.

"5th, A crop of white corn suited to the soil.

"This system I should be glad to see adopted on all soils whatever, except fen land, which I think from experience is not well suited to it, for the reasons before given. It has been carried into practice on deep strong land in this county, and the following is a statement of what relates to thirty acres, comprizing one division of the tillage land. In the year 1786, clean ploughing without dung, cole-seed an ordinary crop sheep-fed; 1787, barley, seed one bushel and a half per acre, no dung, produce six quarters per acre; 1788, clover, no dung, mown twice, an enormous crop both times; 1789, beans, three bushels per acre, sheep fed, no dung, produce seven quarters per acre, 1790, barley, one bushel and a half for seed per acre, no dung, produce a little above six quarters; 1791, clean deep ploughing, dunged and cole-seed. Sheep fed wonderfully strong; 1792, barley, one bushel and a half for seed per acre, in many parts rotten on the ground, produce five quarters per acre, clover in a great measure destroyed; 1793, clover, an ordinary crop, partly for the reason above stated; and partly from extreme drought, but the land clean and very lusty; the land is worth more by at least 5*s*. per acre than at beginning; and it is worthy of remark, that the other portions of the same farm, which during the same years have been managed exactly in the same manner, with the advantage of dung from the beginning, have borne no better crops, nor indeed quite so productive; and I am really of opinion that if no dung had been used in 1791, the subsequent barley or clover crops would have been much better. After all the volumes that have been written upon farming, *rational system* is the only true ground work of general improvement, *and I should be glad to see any objection that can be offered to the above plan;* for it seems to me to admit of every crop that is *useful to man or beast*, without deviating from the general rule of management. Instead of cole-seed any other vegetable, instead of barley any other white corn, instead of clover any other grass seed, instead of beans any other pulse grain, and instead of barley, again, any other white corn may be used, while a small portion of either division may be set apart for supplying such seeds as from their exhausting nature are not admissible for general cultivation. In short, from experience, I will be bold to affirm, that (except in such cases as no human foresight can prevent), it will neither fail to afford a luxuriant produce, nor to assist our own operations of improvement. My idea has always been that farmers are easiest excited to good management, by falling in a little with those habits which practical men know to be inseparable from the detail of agriculture. When they see a brother farmer cultivating the same sort of soil, employing the same description of labourers, and conforming in all essential points to the same modes and customs with themselves, and find that he produces better crops, and derives in all appearance a greater produce than they do, that watchful monitor, self-interest, prompts an inquiry into the detail of his operations; they see perhaps that he sows beans, or some other meliorating crop, when the land is in its greatest vigour, instead of introducing the same thing after an exhausting crop of corn; they observe that he does not depend so much on keeping his land up to the mark by strong manuring, as by a different course of those very sorts of corn and vegetables, which they have been in the habit of using themselves; they learn perhaps that he saves a considerable part of the rent by lessening the usual proportion of seed, and notwithstanding, that his crops are stronger, and apparently more productive than theirs; and after all, that at the end of the course his land is in a better state than it was at the beginning. These are matters that if they really exist, are likely enough to claim the attention of the neighbourhood; for few are so obstinate and perverse as not to avail themselves of such examples. Far be it from me to decry ingenuity of any kind, I am truly sensible of the value of many machines that have been invented for facilitating the operations of husbandry, as well as for cleaning the land and reducing the quantity of seed; and all I mean to say is, that those implements will find their way to general use by slow and gradual means only; while he that executes *a profitable system of management*, suited to the common broad-cast husbandry, bids fair to engage the notice of the neighbourhood, in spite of the impression of those habits which attach to unlettered farmers, and may at least be

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* Sheep feeding of beans is found to be a very beneficial practice.

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said, to be trying to do an essential service both to the cause of agriculture, and to his country."

I must enter my decided protest against the system of farming without dung, here laid down by the reporter from whom the above is extracted, as being pregnant with the most mischievous tendency, and striking at the main spring of all agricultural improvements, for I consider manure properly disposed of to be so. It will be necessary for me to premise that I have not the least doubt but that this piece of land performed to a tittle every thing which that gentleman has asserted; I know many acres of land in Lincolnshire where it might be effected, but I know many thousands where it would be utterly impossible, and though therefore it is in many situations practicable, yet as a *general measure*, I must condemn it: we have already too much of the practice, which will readily be seen to be the case, when we look around and see so many acres of land which never have their produce returned them in the shape of manure, and are *thus* frequently, too frequently, *exhausted.* I may also observe that it has been my opinion very long, that so long as land will bear great burthens, so as to almost continually keep sun and wind from it, that it would bear not only great but profitable crops; I also know that land of this nature possessing such a superfluous quantity of vegetable matter, if treated in the way prescribed in the former report from which I have made the extract, would, especially if moist, become very light and of a slippery nature: for it may be observed in only one smothering crop of pease, that the land will be very light and have a rich appearance, whence I infer that were pease or any other ameliorating crop successively sown, so as to prevent exhalation from the soil, that land would probably have more vegetable matter in it than it ought to have, and would need *foreign* aid to cause it to bring profitable corn crops, as it would be apt to bring much straw and but little grain, and that of a light bad quality. I have observed a part of a field, such as rich headlands, &c. bring crops of that kind for many years together, and not require any dung. From such observations I have my doubts whether it be the weight of a crop which carries away the vegetable matter, and this particular instance which I have extracted rather strengthens them. It appears plain to me that vegetable matter is exhaled from soils by the action of the sun and wind, and that thus they become more calcareous, and thus the land is put in a state for producing white crops with less straw and more grain, and this may have been the cause for such great partiality to summer fallows. I conclude, from what has been advanced, that it is very wrong to sow lands with two green crops successively or with two white crops; thus if the green crop preserves the vegetable, and the white crop from not affording shade to the soil, causes the soil to be more calcareous, then the great necessity of cross cropping on all soils is obvious. I have always been partial to white crops, at least as many as were consistent, as in my own practice they have generally proved the most profitable crop, rape-seed excepted. Beans or pease or any green crop pay better, however, than summer fallows, though they do often prove precarious, excepting garden pease, which I have from experience found not to be so. It is of itself inconsistent to pretend to manage tillage land without dung, as by nature the straw being properly managed will supply the land it came from with manure, and every farm will thus supply itself with this article; what use is there then in endeavouring to persuade farmers to manage without it, and to what purpose is the dung to be applied? But without further comments on the subject, where there is one acre of land which could be made to produce crops without dung, by what is termed clean ploughing (i. e. deep ploughing) and sowing two green crops together or successively, there is one thousand acres which could not be made to do it. I so well know manure to be one of the grand objects to be observed in all farming, that I feel no hesitation in asserting that, by a proper mixture of dung and marl being applied to those finest and most productive soils, which bring six quarters of corn by the method pursued without dung, eight quarters would be produced. It may be observed in the account of the produce of this county, p. 122, there are many instances where after summer fallowing, and applying from twelve to fifteen loads of long dung per acre, or sheep folding, the produce is but eight, nine, twelve or sixteen bushels per acre; what then would be the produce were no dung applied for eight or nine years together. I never farmed any land that was worth ploughing without dung, nor did I ever find money so well laid out, as in making compost and laying it on land in proper quantities of a proper sort, and at proper seasons; these things being attended to I never found any land ungrateful. Though manure is said to be and really is a great expense, I will undertake to farm with any man for the term of twenty-one years, who shall be bound down to manage without dung and I with; accurate debtor and creditor accounts being kept by each. The saving of seed is certainly a very great object, could it be done with *general* success; I have known some very abundant crops of grain by sowing small quantities of seed, and also some good crops by sowing small corn on what is called bad seed; but I have known much better from sowing the general quantity, and good seed; I am convinced that on good land, where four and a half bushels of barley are sown, that, taking one year with another, more corn will in proportion be produced, than where one bushel and a half per acre is sown. As to beans three bushels of good ones are a proper quantity, whether sown by the drill or broad-cast, but I have found an advantage in sowing four bushels, and hoeing them the same as turnips, destroying the weak plants, which has always paid well for the additional bushel of seed. In sowing barley I was a long time myself in the habits of sowing three bushels per acre, and my greatest general produce was then four quarters or four and a half quarters. I tried four and a half bushels of seed barley on the very same farm, and with nearly the same management, and I then seldom had less than six quarters per acre; in all crops I ever yet saw, where the corn crop was thin, the deficiency was made up by weeds; as to the observation of there being " every crop which was useful to man or beast," this is said immediately after not to be the case, there being neither wheat nor oats, two most useful crops, and as much or more in general use than barley and beans; and as it is extremely probable that barley and beans are not so impoverishing as wheat and oats, it is most likely that had the latter been sown instead of the former, that the aid of manure would have been requisite. It cannot therefore be called a fair trial, and I am convinced that were such systems *universally* adopted, " land," (in the author's own words) " would be so reduced as not to be restored to a *train* of improvement, without much time, fresh labour, and a new," and I may add enormous " expense." Upon the whole I differ with him in respect to *dung and quantity of seed*, and on account of his seeming wish to bring such a system into *universal* use; I agree with him in many of his remarks, and especially in that respecting " common broad-cast husbandry ;" only I wish for the adoption of a practical as well as rational and profitable system of management, adapted not to a *few acres* but to the *kingdom in general.*

In regard to fen lands, the following rotation was adopted with success by John Ilett, Esq. of Somersham fen, and is now practiced by several fen farmers.

First year plough and burn and sow cole-seed, to be eaten on the ground; second year oats, and sometimes the third also, then fallow for cole-seed, and the rubbish burned; then cole-seed eaten on the ground; then a crop of oats, afterwards a crop of wheat, to be laid down with clover and other artificial seeds several years. The produce is very extraordinary every crop, and also when it is laid down.

The rotation, however, which Mr. Scott, of Chatteris, recommends, is, first year plough and burn, and sow cole-seed, which should be eaten on the ground; except a little carted off for bullocks, hogs, &c.; second year, oats; third year, beans; fourth year, wheat; fifth year, fallowed for cole-seed; which should be eaten by sheep, bullocks, and hogs, chiefly on the ground; sixth year laid down at spring, with ten lbs. of red clover, and ten lbs. of white clover, and about a peck of the best hay-seeds, or rye-grass; with a small portion of parsley seeds, and a few other seeds also, then lie two or three years in grass.

He also hints that it might be practicable to obtain a good crop of rye, oats, barley, beans, or peas, on all early soils in this county, especially such lands as are subject to burn, in sufficient time to obtain a good crop of cole-seed afterwards. And such a mode of procuring double crops, on what is now commonly considered very indifferent land, must be a most desirable agricultural acquisition. Of late, indeed, several farmers sow cole-seed on

stubbles,

stubbles, to stand for a crop of seed; and most stubbles, on early land in early districts, should be either sown with cole-seed, or some other winter crop.

SECT. V.—MANURES.

The following are the manures used in this county for the crops which are mentioned in this chapter.

Abbotesley. Sheep folding for wheat, and yard dung for barley.

Alconbury. Sheep folding and yard dung.

Alwalton and Barham. Sheep folding and yard dung.

Bluntisham. Yard dung.

Brampton, Brington, Broughton, and Buckden. Sheep folding, and yard dung.

Buckworth. Yard dung, and paring and burning approved of.

Bury. Yard dung, twelve or sixteen cart loads per acre, and sheep folding.

Bythorne. Yard dung, and sheep folding.

Catworth. Yard dung for barley, sheep folding for wheat.

Caldecot. Yard dung.

Chesterton. Yard dung, and a little sheep folding.

Coln. Yard dung, paring and burning much approved.

Conington. Yard dung, bone manure, much approved.

Covington. Yard dung, bone manure, much approved.

Denton, Doddington, and Easton. Yard dung, and sheep folding.

Elton. Yard dung and lime.

Ellington. Yard dung, sheep folding, but not much esteemed, paring and burning.

Everton. Yard dung for barley, sheep folding for wheat, and malt dust and rape dust, sixty bushels per acre for wheat.

Eynsbury. Yard dung for barley, and for wheat, when they can spare it, but in general sheep folding for wheat.

Farcet. Yard dung, paring and burning much approved.

Fenny Stanton. Yard dung, and sheep folding; their method of manuring for wheat, is to spread dung in its long state on the lea, ploughing it in three times before sowing; and this is sometimes practised for barley.

Fletton and Folkesworth. Cart dung.

Gidding Magna and Parva, and Glatton. Cart dung, and sheep folding.

Godmanchester. Yard dung.

Graveley. Yard dung for barley, and sheep folding for wheat.

Graffham. Paring and burning, yard dung, and some sheep folding.

Gransdon. Yard dung for barley, sheep folding for wheat.

Haddon. Yard dung, from ten to twelve cart loads per acre.

Haile Weston. Yard dung for barley, sheep folding for wheat, paring and burning, and stable dung bought.

Hamerton. Yard dung.

Hartford. Paring and burning, sheep folding, yard dung, pigeons dung, soot, and malt coombs.

Hemingford Grey. Yard dung.

Hemingford Abbots. Yard dung for barley, sheep folding on stubbles for wheat.

Hilton and Houghton. Yard dung for barley, and sheep folding for wheat.

Holme. Yard dung, and sheep folding.

Huntingdon. Yard dung, street-sweepings, and stable dung.

Keystone. Paring and burning approved, yard dung, and sheep folding.

Kimbolton. Yard dung for barley, sheep folding for wheat, soot, and pigeon dung.

Leighton Bromeswold, Long Stow, Luddington, Lutton, Molesworth, and Morborn. Yard dung, and sheep folding.

Needingworth and Offord Cluny. Cart dung.

Offord D'Arcy. Sheep folding for wheat, yard dung for barley.

Old Hurst. Yard dung.

Old Weston. Yard dung and sheep folding.

Overton Longville. Yard dung, from sixteen to twenty loads per acre.

Overton Waterville. Yard dung, and sheep folding.

Papworth. Yard dung for barley, and sheep folding for wheat.

Paxton Magna and Parva. Sheep folding for wheat, pigeon's dung, and yard dung for barley.

Perry. Sheep folding for wheat, yard dung for barley.

Pidley. Paring and burning approved of, cart dung, and sheep folding.

Ramsey. Paring and burning approved of, cart dung.

Raveley Magna, Yard dung, from fifteen to twenty loads per acre.

Raveley Parva. Yard dung, and paring and burning very much esteemed.

Ripton Abbots. Paring and burning approved, yard dung, and a little sheep folding.

Ripton Regis. Yard dung, from fifteen to twenty loads per acre, sheep folding on the fallows.

Sawtry St. Andrew's, and St. Judith's. Yard dung, and sheep folding.

St. Neot's. Cart dung, malt dust, compost, pigeon dung, sheep folding, paring and burning very extensively practised, and much approved.

St. Ive's. Cart dung, stable dung, &c.

Somersham. Yard dung, paring and burning very much practised and approved.

Southoe. Yard dung, ten cart loads per acre on the turnip crop, rotten dung, pig dung, about six cart loads per acre; soot and malt dust to the barley crops on clay soils, when sown after tares, instead of a fallow.

Spaldwick. Yard dung, and dung from cattle, when fattening on linseed cake.

Standground. Yard dung.

Stebbington. Yard dung, and sheep folding.

Steeple Gidding. Yard dung.

Stewkley Magna and Parva. Yard dung, and sheep folding.

Stilton. Stable dung, fourteen loads per acre.

Stoughton. Sheep folding for wheat, yard dung for barley.

Swineshead. Yard dung, and sheep folding.

Thurning. Yard dung, and sheep folding.

Toseland. Sheep folding for wheat, cart dung for barley.

Upton and Upwood. Cart dung, and sheep folding.

Warboys. Yard dung, from twelve to twenty loads per acre, each load being about forty bushels, and sheep folding.

Warsley. Yard dung for barley, sheep-folding for wheat, light compost, pigeon dung.

Water Newton. Yard dung, soot.

Wistow. Yard dung, and sheep folding.

Winwick and Witton. Yard dung, and sheep folding.

Woodstone. Yard dung, street sweepings, and stable dung from Peterborough.

Wood Walton. Yard dung, paring and burning in the fens.

Wood Hurst. Yard dung.

Wooley. Yard dung for fallows, sheep folding for wheat.

Yaxley. Yard dung, paring and burning, peat ashes.

Yelling. Yard dung for barley, sheep folding for wheat.

N. B. Wherever the term cart dung occurs, it signifies the same as yard or fold dung, cart dung being the term for all common manure in this county.

In a former report of this county it is stated that very few farmers resort to any other manure than what is produced upon their own farms; this will appear to be the case upon perusing the foregoing account, but it will be observed also that the miserable practice of sheep-folding is almost universally followed; the loss occasioned by this, as the farmers here very properly term it, "*hard working their sheep;*" is scarcely to be calculated whether it be considered as to the sheep themselves, the robbing of the land on which they are grazed previous to their being driven to the fold on the fallows, or the great loss of *their dung going to the fold.** In another part of the same report

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* See calculation of expense and profit on a farm where this system is pursued.

port it is said "a very respectable writer* has observed that, 'any limited portion of land tolerably good in nature, will produce, if well cultivated and properly stocked, vegetable and animal manure sufficient to support itself in good heart for ages, without any foreign aid.' I am not only of the same opinion, but from many years experience in practical husbandry, will go so far as to assert, that any soil whatever, capable of cultivation, (the groundwork for improvement being once laid,) may by judicious management be made not only to support itself in heart without foreign aid, but to increase in goodness; and further, that however various our soils, and different in their nature, the same order or course of cropping ought to be pursued, (fen land always excepted), changing only the species of our corn and vegetables, and adapting them to the nature of the soil we have to work upon. Why should we not at once fall into a method, that will infallibly assist our improvements instead of checking them? That such a method is founded on reason, let us for a moment compare the operations of husbandry, with what we cannot but observe in the animal and vegetable world; to which in this case the earth bears a strong analogy, since in either the springs of improvement being once *checked or restrained*, they can only be restored to motion, by a stronger application of the means of sustenance. When cattle are thriving fast, do we not observe that if by chance their career is checked by short pastures, or by a worse quality of food than they have been accustomed to, their flesh becomes loose and wasted; and they are hardly to be restored to their former state. Plants, however strong and healthy, if checked in their growth by drought or an untimely frost, become languid and weak, and are with difficulty restored to their former vigour." With these two most excellent remarks I fully coincide, knowing them from long experience to be literally true. I would wish them to be engraven on every farmer's mind, so that the doctrine which they set forth, might never be lost sight of or forgotten; at the same time, I must remark that in turnips, barley, clover and wheat process, the land will barely find itself once in four years with ten cart loads of dung per acre, (by which I mean long-dung) without some meadow hay, nor will the wheat, beans, barley, and beans process produce more in the same time, than from twelve to fifteen cart loads per acre, in the common way of applying it in its long state; it therefore behoves every farmer to pay the most accurate and strict attention to the making of *compost*, without which this grand desideratum in agriculture, *of all farms producing manure within themselves, sufficient for all their purposes*, cannot be acquired.*

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* Mr. Kent.

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* See further remarks on yard dung, manures, lime, &c. Chapter XII. of this Report, and for compost making, third edition of Experienced Farmer, Vol. 1. p. 178 to 214, and 120 to 223, and 277 to 288, and vol. 2, page 354, 399 to 409, and 459 to 451 and 479.

SECT. V.—SEED AND PRODUCE.

Parishes.	Wheat.		Barley.		Oats.		Pease.		Beans.		Sundries.	
	Seed: Bushels.	Produce. Bushels.	Seed. Bushels.	Produce. Bushels.	Seed. Bushels.	Produce. Bushels.	Seed. Bushels.	Produce. bushels.	Seed. Bushels.	Produce. Bushels.	Seed. Bushels.	Produce. Bushels.
Abbotesley	2	15	4	18	4	12	4	6	4	—	—	—
Alconbury	3	20	4	28	5	32	—	—	—	20	—	—
Alwalton	3	24	4	32	—	—	—	—	6	20	—	—
Barham	3	18	5	24	5	24	—	—	5	20	—	—
Bluntishamcum Erith	2½	25	4	48	—	—	—	—	4	24	2½ tares	20 tares
Brampton	3	20	4	28	—	—	3	20	4½	28	—	—
Brington	3	20	4	24	—	—	—	—	3	16	—	—
Broughton	2 to 3	20	4, 5	28	5, 8	30, 40	—	—	4, 5½	20	—	—
Broughton by the drill	2½	20	3½	28	—	—	—	—	3½	20	—	—
Buckden	2½	20	4	32	5	24	4	20	5	20	—	—
Buckworth	2½	20 to 24	4	32, 40	—	—	—	—	4	40,'48	—	—
Bury	2½	20	5	32	5	40	—	—	5	24	—	—
Bythorne	3	22	4	28	5	32	—	—	4½	24	—	—
Caldecot	3	16	5	32	—	—	—	—	5½	16	—	—
Catworth	2 to 2½	22	4	32	6	32	—	—	4	20	—	—
Chesterton	3	20	5	32	7	20	—	—	4	20	—	—
Coln	2½	20	3	28	—	—	—	—	4,	20	—	—
Conington	2½	32	4	48	5	60	—	—	2½ drilled	40 drilled	—	—
Covington	2½	20	4	30	—	—	—	—	4	20	—	—
Denton	3	20	5	28	5½	40	—	—	6	18	—	—
Doddington	2½	20	5	32	—	—	4	15	5	15	—	—
Easton	3	20	5	32	6	32	—	—	5	24	—	—

Parishes.	Wheat.		Barley.		Oats.		Pease.		Beans.		Sundries.	
	Seed. Bushels.	Produce. Bushels.	Seed. Bushels.	Produce. Bushels.	Seed. Bushels.	Produce. Bushels.	Seed. Bushels.	Produce. Bushels.	Seed. Bushels.	Produce. Bushels.	Seed. Bushels.	Produce. Bushels.
Ellington	3	18	5	24	5	24	—	—	5	20	—	—
Elton	3	20	4½	36	6	44	—	—	5	28	—	—
Everton	3	15	5	24	5	12	5	10	—	—	—	—
Eynsbury	2½	20	3, 4½	28	5	20	—	—	5	20	—	—
Farcet	2½	20	4	40	7	40	—	—	6	28	—	—
Fenny Stanton	3	25	4	40	5	25	—	—	5	32	2½ tares	20 tares
Fletton	2½	20	5	24	—	—	—	—	6	20	—	—
Folkesworth	3	24	4, 5	44	—	—	—	—	5	32	—	—
Gidding Magna	2½	20	5	24	5	24	—	—	5	20	—	—
Gidding Parva	3	18	6	24	6	24	—	—	5	16	—	—
Glatton	2½	52	4	24	—	—	—	—	4, 5	16	—	—
Godmanchester	2½	24	4, 5	36	—	—	—	—	4, 5	20	—	—
Graffham	3	18	5	24	—	—	—	—	5	20	—	—
Graveley	2½	15	4½	20	4½	10	—	—	4½	10	—	—
Gransdon	2½	12 to 15	4½	20	4½	12	—	—	4	8	—	—
Haddon	2½	20	4½	32	6, 7	40	—	—	6	16	—	—
Haile Weston	2½	20	4	32	6	20	—	—	5	15	—	—
Hamerton	3	20	5	32	8	48	—	—	5	24	—	—
Hartford	2½, 3	25	4	40	4	40	—	—	5½	40	—	—
Hemingford Grey	2½	24	5	32	—	—	—	—	5	24	2½	20 tares
Hemingford Abbots	2½	25	4	40	6	40	—	—	4	24	—	—
Hilton	3	20	5	32	4, 5	16	—	—	4, 5	16	—	—
Hulme	2½	20	3½, 4	40	5½	48	—	—	4	21	—	—

Parishes.	Wheat.		Barley.		Oats.		Pease.		Beans.		Sundries.	
	Seed-Bushels.	Produce. Buseels.	Seed. Bushels.	Produce. Bushels.	Seed. Bushels.	Produce. Bushels.	Seed. Bushels.	Produce. Bushels;	Seed Bushels.	Produce. Bushels.	Seed. Bushels.	Produce. Bushels.
Houghton	2½	25	5	40	7, 8	44	—	—	5	20	—	—
Keystone .	2½	20	5, 6	30	—	—	—	—	5	20	—	—
Kimbolton .	3	20	4	40	4	32	—	—	5.	20	—	—
Leighton Bromswold	3	22	4	40	5	40	—	—	4	25	—	—
Long Stow . .	2½	23	4	36	5	24	—	—	5	20	—	—
Luddington .	2½	16	4½	20	5	16	—	—	4½	14	—	—
Lutton .	2½	18	4, 5	32	5, 8	33	—	—	4, 5	32	—	—
Molesworth .	2½	20	5	24	—	—	—	—	5	20	—	—
Morborn .	2½	20	5	32	4½	40	—	—	5	24.	—	—
Needingworth cum Holywell .	2½	20	4	28	4	40	—	—	5	28, 40	—	—
Offord Cluny .	2½	17½	4	28	5	24	—	—	4	16	—	—
Offord D'Arcy .	2½	17½	4	28	5	24	—	—	4	16	—	—
Old Hurst .	3	15	5	33	5	24	—	—	5	16	—	—
Old Weston . .	3	22	5	26	5	25	—	—	5	15	—	—
Overton Longville	3	28	5	40	—	—	—	—	6	24	—	—
Overton Waterville	3	20	5	32	—	—	—	—	6	16	—	—
Papworth .	2½	16	4	20	4	20	—	—	4	20	—	—
Paxton Magna .	2½	13	4½	20	5	12	—	—	5	13	—	—
Paxton Parva .	3	16	4	24	5	20	5	14	—	—	—	—
Perry .	2½	15	5	22	5, 6	24	—	—	4, 5	15	—	—
Pidley .	3	20	5	28	5	36	—	—	5	16	—	—
Ramsey . .	2, 3	20	4	32	5	40	5	40	5	24	4 or 1 peck cole-seed	8 to 40 bushels.
Raveley Magna .	2½, 2¾	24, 40	4½	32	5, 6	40	—	—	4, 5	28	—	—

Parishes.	Wheat.		Barley.		Oats.		Pease.		Beans.		Sundries.	
	Seed. Bushels.	Produce. Bushels.	Seed Bushels.	Produce. Bushels.	Seed. Bushels.	Produce. Bushels.	Seed. Bushels.	Produce Bushels.	Seed. Bushels.	Produce. Bushels.	Seed. Bushels	Produce. Bushels.
Raveley Parva	2½, 3	24	4½, 5	32	5, 6	24	—	—	4	16	—	—
Ripton Abbots	2½	25	4, 4½	30, 45	4	48	—	—	4	32	—	—
Ripton Regis	2½, 3	20	5	36	6	32	—	—	5	24	—	—
Sawtry St. Andrew	2½	20	5	30	5	26	—	—	5	30	—	—
Sawtry St. Judith	2½	20	5	30	5	26	—	—	5	30	—	—
St. Neot's	2½	20	4	28	—	—	—	—	4	20	—	—
St. Ive's	3	30	4	45	—	—	—	—	4	32	—	—
Somersham	2½, 3	25	not much	grown	5, 8	48	—	—	—	—	cole seed ¾ peck.	24 bushels.
Southoe	3	20	4½	40	—	—	4	20	5	24	—	—
Spaldwick	2½	20	4	32	5, 6	36	—	—	4, 5	28	—	—
Standground	2½	24	4	40	6	38	—	—	5	24	—	—
Stebbington	3	20	4	30	—	—	5	20	5	20	—	—
Steeple Gidding	3	20	5	32	8	48	—	—	5	24	—	—
Stewkley Magna	2½	24	4	32	6, 7	24	—	—	4, 5	20	—	—
Stewkley Parva	2, 3	20	4, 5	32, 40	4, 8	40, 56	—	—	5	20, 24	—	—
Stilton	3	22	4	20	—	—	—	—	5	24	—	—
Stoughton	2½	17	4½	24	5	24	—	—	4	18	—	—
Swineshead	2½	20	3½	32	4	48	—	—	4	20	—	—
Thurning	2½	16	4	32	5	46	—	—	5	20	—	—
Toseland	2½	11	4	12	4	9	—	—	4	6	—	—
Upton	2, 3	17	3, 4	16	4, 5	32	—	—	3, 4	16	—	—
Upwood	2½	20	5	32	6½	32	—	—	5	20	—	—
Warsley	2½	14	4	16	4	12	—	—	4	6	—	—
Warboys	3	20	4, 5	32	5	25	—	—	4, 5	20	—	—

Parishes.	Wheat.		Barley.		Oats.		Pease.		Beans.		Sundries.	
	Seed. Bushels.	Produce. Bushels.	Seed. Bushels.	Produce. Bushels.	Seed. Bushels.	Produce. Bushels.	Seed. Bushels.	Produce. Bushels.	Seed. Bushels.	Produce. Bushels.	Seed. Bushels.	Produce. Bushels.
Water Newton	3, 3½	22, 28	4½	36 to 56	5	56	3	24	3	22	—	—
Wistow	2½, 3	20	4 to 5	30	5, 6	30	—	—	4, 5	20	—	—
Winwick	3	16	5	32	5	48	5	20	5	20	—	—
Witton	2½, 3	25	5	40	7, 8	44	—	—	5	20	—	—
Wood Stone	3	28	6	28	6	32	—	—	6	28	—	—
Wood Walton	2¾, 3	20	4, 5	32	4	30	—	—	4	20	—	—
Wood Hurst	2¼	20	5½	40	—	—	—	—	5	28	—	—
Wooley	3	18	5	24	—	—	—	—	5	20	—	—
Yaxley	2½	28	4	48	—	—	—	—	5	40	—	—
Yelling	2½	12	3, 4	18	4	16	—	—	3, 4	6	—	—
Average	2¾	20¼	4½	30¾	5¼	3⅕	$4\frac{7}{10}$	$20\frac{9}{10}$	$4\frac{9}{10}$	21		
										tares	2½	20
										cole or rape	¼ peck	44 bushels.
										hemp seed at Somersham.	4	24

SECT. VI.—WHEAT.

1st, PREPARATION; by two or three ploughings on fallows, and one ploughing on clover lea. 2nd, Manuring; by sheep folding chiefly. Some few manure with yard dung on the stubbles and then plough three times. 3d, Season; chiefly in October, some as late as December. 4th, Putting in: generally ploughed in, though some harrow in; on lea land always harrowed in, on fen lands it is sometimes obliged to be hoed or raked in, especially after floods, the land being then too soft for the horses to go upon it; some in these cases tread it in by women and children. 5th, Seed; see table (p. 96). 6th, Steeping; there are various methods of doing this, some only washing it in water, some in brine and chamber-lye, some with salt and water sufficiently strong to swim an egg, and then mix it with lime. In one parish the generality of the farmers steep it in water with one lb. of salt to one bushel of wheat, while one only washes in water, and his wheat is in general *fus-balled* or *blacked.* At St. Neot's the following receipt was given to me: Thirty gallons of water, twenty-eight lb. of salt, boil it for one hour, in the last ten minutes of which put in one lb. of arsenick pounded or beat fine, let it simmer; when cold let the wheat be immersed exactly one hour, then take it out and lime it; after this process the sooner it is sown the better. 7th, Sort; red lammas, some few the Kentish white wheat, which seems to answer well. 8th, Depth, from two and a half to three or three and a half inches. 9th, Drilling; but very little, dibbling none. 11th, Water furrowing; done by a plough and one horse. 12th, Hoeing; none except in very bad crops, where there are more *weeds* than *wheat.* 13th, Feeding; some few put sheep on the crops in spring for this purpose. 14th, Reaping and harvesting; by the hook and sickle, stocked and capped by a few. 15th, Distempers, mildew, and smut, cockle-eared and root-fallen. 16th, Stacking in long round stacks. 17th, Thrashing, done chiefly by the flail, though there are some few machines. 18th, Price, is 9*s.* 7*d.* per bushel or 48*s.* a load of five bushels. 19th, Grinding; two bushels in twenty four taken as toll, the wheat being carried to and from the mill by the miller. 20th, Stubbles; these are more correctly managed in this county than in any which has fallen under my observation; in many parts of it they are mown and harvested as carefully as any other part of the produce, being brought home, stacked up and taken proper care of, for thatching the following years, stacks, buildings, &c. &c. Farmers here have learned the great necessity of doing this, which is far from being the case elsewhere, many farmers insisting that stubble *being ploughed in* acts as manure, and is therefore beneficial; but farmers in this county observe, (which is perfectly right), that so doing is a real injury to the succeeding crops when ploughed in, the stubble leys between one furrow and another, letting in the wet, so that every fall of snow or rain, gets intermixed with the soil, and thus the land gets much more wet than it would otherwise do; thus the land is in winter quite starved, and in summer for the same reason, the sun and wind so penetrate into it that it is then much too dry, consequently ploughing in stubbles is a real injury; and every one must allow that the grand desideratum is to keep land *dry* in *winter,* and as *moist* as possible in *summer.* There was a strong proof of the good effects of thus taking due care of the stubbles, at Luddington, where one farmer had done so, while his neighbours had neglected it; the consequence was that his crops of wheat were infinitely superior to the others. The farmers who live on the borders of the fens, having both high and low land in tillage, collect the wheat stubbles from off the high land, and carry it down to the fen lands, where it is burnt as a manure; this seems an odd practice, but I suppose it arises from their having seen the good effects of paring and burning on those low lands, therefore they suppose the straw burning must also have a good effect, not considering that it would be of equal if not greater service to the high lands.

SECT. VII.—RYE.

None sown in this county this year (1806).

SECT. VIII.—BARLEY.

1st, Tillage, ploughing three times and a seed ploughing, with from two to three or four horses for the first time, and sometimes *six or eight;* harrowing is done by some with single square harrows, by others with joint harrows, and three horses at length; the rolling is done by light wooden rollers; none put in without ploughing; and none scarified. 2d, Manure, yard dung. 3d, Drilling, but very little. 4th, Time; March or April. 5th, Sort; long eared. 6th, Seed; see table p. (122). 7th, Straw; given to cattle in the winter season. 8th, Awns; broken off by the flail, some by an iron machine for that purpose, about fourteen inches square, with light bars about one inch asunder. 9th, Bread; but little made of it in this county. Price of barley 36*s.* per quarter.

SECT. IX.—OATS.

1st, Tillage; ploughing is done twice in the fens, and once in the highlands; harrowing is done by the square horse harrow, rolling by a light wooden roller. 2d, 3d, 4th, Manuring, drilling, and dibbling, none. 5th, Time; March or April, sometimes in the fens as late as May. 6th, Sort; short smalls, potatoe, and Irish blues. 7th, Seed; see table page (122). 8th, Depth; one and a half to two inches. 9th, Rolling; done when they are weaned from the kernel, 10th, Weeding, done by women in the fens at from 8*s.* to 10*s.* per acre. 11th, Harvesting; by the sickle at from 10*s.* to 12*s.* per acre. 12th, Produce; see the table p. (122). 13th, Straw; given to cattle. 14th, Application; to horses chiefly, but some little made into meal. Price of oats 24*s.* per quarter.

SECT. X.—PEASE.

1st, Tillage; ploughing once, harrowing and rolling the same as for oats. 2d, Manuring; none. 3d, Drilling by a few, but not general. 4th, Dibbling; by a few. 5th, Time; February and March. 6th, Sort; maple and grey pea. 7th, Seed; see table page (122). 8th, Depth; one inch and a half to

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to two inches. 9th, Rolling; not very common. 10th, Podding for market, none. 11th, Hoeing; very seldom done. 12th, Weeding; done by a spud. 13th, Harvesting; mown and cocked. 14th, Produce; see table. 15th, Straw, given to horses and cattle. 16th, Application; for pig feed. 17th, Stubbles; eaten by sheep. 18th, Bread; none made.

SECT. XI.—BEANS.

1st, Soil; clay and loam. 2d, Tillage; ploughing once, harrowing by the square, one horse harrow; rolling, but seldom done; without ploughing, none; scarifying none. 3d, Manuring; none. 4th and 5th, Drilling and dibbling; by very few. 6th, Time; February and March. 7th, Sort; the large horse and pigeon. 8th, Seed, see table page (122). 9th, Depth, one inch and a half or two inches; if ploughed in three inches and a half or four inches. 10th and 11th, Rolling or harrowing, very seldom done. 12th and 13th, Horse and handhoeing; done by a few. 14th, Weeding; done by sheep, and by hand with spuds. 15th, Distempers; the fly. 16th, Cutting very green; a great quantity are cut very green, but it is said to be a bad way, and more done on account of employing harvestmen than on any other account. 17th, Harvesting; chiefly cocked. 18th, Produce see the table. 19th, Straw; given chiefly to horses. 20th, Application; to horses and pigs. 21st, Stubbles; fed off by sheep. 22d, How used as food; never except as above described; price of beans 38*s*. per quarter.

SECT. XII.—TARES.

1st, With what view sown; some few for seed, some few for hay, greatest part for soiling, a few for feeding. 2d, For seed; tillage, ploughing once, harrowing until the mould is very fine; rolling, done by a smooth without ploughing, none. Scarifying, none. Manuring, is but seldom done to this crop, though there is none which more requires or pays better for it than tares; theyare never drilled or dibbled in this county. The time for winter tares, September or October, but they seldom answer so well as spring tares, making land to be very foul, and the crops often being very bad, and there is very seldom above ten or fourteen days difference in the time of mowing those sown in September, and those which are sown in February or March; the spring crops generally pay much the best, cutting four times as much in weight as the winter crops. Sorts are the winter and spring. Seed, see the table p. (122), three bushels are a proper quantity. Depth, one inch and a half to two inches; rolling the crop is very rarely done; never hoed, nor weeded, except intended for seed, as when mown, many of the weeds are as good as the tares, such as sow thistles, &c. 3d, For hay. 1st, Time of mowing; when in blossom. 2d, Making; the same as other hay crops. 3d, Salting; not practiced. 4th, Application. Value. To horses about 4*l.* per acre. 5th, Stubbles; sometimes sown with turnips, at other times with wheat. 4th, For soiling. 1st, time, of mowing, from the time there is sufficient substance until in full pod. 2d, Stock to which given; horses and pigs. 3d, Advantages; the keeping a great number of horses and pigs, and making a very large quantity of dung. 4th, Value per acre; from 6*l.* to 10*l.* 5th, Quantity of dung raised. 6th, Loads per acre, or according to litter which is given to cattle while soiled on them. 5th, feeding. 1st, with that stock with sheep. 2d, effect; from treading the land by folding the sheep, from which there is also a small dressing for the land. Value about 2*l.* per acre. 3d, how often fed; some put just such a number of sheep on them as will pasture all the season, beginning at the time the crop is three or four inches high, others mow them and give them to sheep in cribs. 4th, stubbles; ploughed two or three times when for wheat, for other crops but once.

SECT. XIII.—LENTILS.

VERY few are sown in this county, but where they are sown, they are reaped as other pulse crops, and given, straw and corn together, to sheep in winter, and are found to be very fattening.

SECT. XIV.—BUCK WHEAT.

NONE cultivated in this county.

SECT. XV.—TURNIPS.

SOIL. Chiefly gravel and skirty lands, but some sown on almost all soils. Tillage, ploughing three times, in some instances four times; those who have scarifiers use them in this process, the land is harrowed to a very fine state. Manuring, yard dung long and short. Time, latter end of June, some in July. Drilling, but very little practiced. Sort, Swedes, tankard and Norfolk seed, two pounds and a half per acre, sometimes more. Rolling, by a smooth wooden roller. Harrowing, done sometimes where the plants are thick in the ground before hoeing. Fly, no preventives to it. Hoeing, done by the hand once, twice, or three times, according as the land may be adapted to the growth of weeds. Consumption, some drawn, generally fed on the land by sheep. Hurdling, done *with small light hurdles and stakes*, at about 4*s.* or 4*s.* 6*d.* per dozen. Effect, a very great improvement to light lands, but on heavy lands it is very injurious to the succeeding crop; some farmers say a loss of from six to eight bushels is sustained per acre. 13th, value; 3*l.*, 3*l.* 10*s.*, or 4*l.* per acre. Modes of preservation, none; except in a few instances, a few being drawn, and the top and bottom tap cut off before they begin to run, and laid up in houses.

If the heavy lands of this county, were ploughed as soon as this crop were eaten off by the sheep, even though the land were wet at the time, and suffered to lay until it got frost, and when the time of sowing the barley came, if it were sown broadcast on that ploughing, which is called a cold tilth, much better crops would be obtained. I know an instance of a farm in Essex of large extent, nearly all in tillage, which is of such a wet, cold, poor clay, that by the old process of ploughing two or three times for the spring crops, there was little or no grain obtained, but plenty of weeds; occasioned by ploughing at an improper season, as by ploughing such soils after the winter's frost has mellowed the surface, a sort of sticky clay is thrown up, so that if dry weather comes on, the soil sets into clods, which the old farmers had often to break by hand with mallets at a very great expense, and at last obtained but very indifferent crops, for by exposing such soils to sun and wind in those drying months, there is scarcely any moisture left in the land for the support of the plants. The present tenant of it, ploughs the land before winter, letting it get the frost, and in the spring the surface falls as fine as powder, and although it is dry enough to receive the seed at top, yet it is so wet underneath, that were the horses to walk upon it, they would poach the land with their feet in such a manner as to render it useless; he therefore pursues the drill system, and ploughs the lands in such a manner that the horses walk in the furrows when drilling, having previously used the scarifier, then harrowed it; and after the crop is arrived at the time for rolling it, this is effected by a roller, small at each end and thicker in the middle, so that the horse again walks in the furrow, the middle of the roller going there also, while the two ends perform the operation by each going half way over a land; he then horse-hoes the crops, the shafts of the hoe being so placed that the horse walks in the furrow, and by these methods he obtains very fine crops of barley, where some seasons scarcely any was grown before. I mention these circumstances as happening on this farm, from its being of the same nature as several of the heavy soils in this county, to endeavour to convince farmers that there need be no fear in sowing barley upon cold tilth; by so doing a very fine mould is obtained, which particularly suits barley and clover crops, and the land retains the moisture below, which is so requisite for all crops. The process which I have just described, does not answer for oats, that crop being the very worst adapted to the drill system. I am I own no friend to the drill system, but circumstances alter cases, and on this land a sufficient cover could not be procured for the seed in any other way. I viewed the crops on this farm last June (1806), and although I afterwards saw many thousand acres of corn, I did not again see on any one farm, so many acres of good crops. On land which will bear the horses, such as gravel, sand, &c. I prefer sowing seeds, two-thirds on the top, and then plough the land in a thin manner in small furrows; then sow the other third, and harrow it in; by this means more seed by nearly double the quantity may be given to land, for by drilling barley at nine inches asunder there is a very large space unoccupied, on which many weeds must grow, and the seed is put into so narrow a compass that one corn lies upon another, when by the method of sowing two-thirds at one time, and one-third at another, the grain is dispersed at one inch asunder; every corn has thus a sufficient space of soil for its support, and it may naturally be expected that a larger produce may be obtained, while the barley is of a much better and evener sample. In every experiment which I have seen tried in drilling barley, it is almost impossible to use more seed than one bushel and a half or two bushels per acre, to be attended with success, and then it causes many tillers which are certain to make the corn to be a bad sample. There is also a very unnecessary expense in horse hoeing, which in the broad cast system is not wanted; horse-hoeing is also very improper on account of its lightening the land, and being done at a time when the crops are forming the coronal root.

SECT. XVI.—COLE SEED OR RAPE.

1st, Soil; chiefly sown on the fens, but other soils have been sown with them, and they answered very well. 2d, Tillage; once ploughed in the fens, if pared and burnt land, and the seed sown and harrowed. 3d, Manuring; on fen land the ashes from paring and burning; if on high land, yard dung, and the same process as for turnips. 4th, Time; if for seed, as late as the last week in July, or beginning of August; but as I have before observed circumstances alter cases here again, and even in one parish, situations differ so very materially, that time must be varied accordingly, as if the plants should be too forward in the winter, the frost will kill them, that is, if it should be severe during that season, and if it be mild they will then come into blossom too early, and it is very likely there may come some frosty nights when they are in this state, which will totally destroy the earliest and best blossoms, and very materially injure the crop both as to weight and quality of the produce, so that there is great nicety in point of time when to sow. If the plants be not large enough to stand the winter, then the crop will be patchy; transplanting is sometimes practised in that case, but transplanting in the spring is too late, and the crops which are raised by it, are generally too light to pay for the additional expense. Time, when for feeding the latter end of June or in July, and eaten off by sheep during winter and in the spring; before the stumps throw the buds out, they are mown and let stand for seed. 5th, Seed; one half peck or a little more, some sow one peck per acre. 6th, Hoeing: seldom done. 7th, Transplanting; some trifling instances. 8th, Fly; not much injury. 9th, Reaping by the hook or sickle; expense 8s. per acre; and ought to be cut rather green as soon as the best seed turns brown, and laid on the ground about one month; if let stand too long, there is great loss often occasioned by heavy winds or high rains; the seed of rapes ought to be black, the crop ought therefore to be cut at the time above mentioned, and laid on the stubbles, and the seed will then be of that colour, on which depends its fetching a good price. 10th, Thrashing; done in the field, at an expense of from 4*l.* to 4*l.* 10*s.* per last of ten quarters and a half, on a large cloth for that purpose, to which it is in some cases carried by men in a cloth slung on two poles; others have sledges for that purpose, with sheets fixed on them so as to prevent loss of seed in moving to the thrashing cloth; these sledges are drawn by horses, and on arriving at the thrashing sheet are turned over upon it. 11th, Produce; seed from eight bushels to forty-eight per acre value in food from 35*s.* to 40*s.* per acre. Price from 56*s.* to 80*s.* Some approve of stacking the crop in a field stack, and letting it stand for six, nine, or twelve months; this is a safe way and a good one to prevent loss, if the farmer can afford to do without the money all that time. There have been many prejudices against letting this crop stand for seed, on account of its doing injury to land; this is certainly an unfounded prejudice; I have myself known an instance of land bearing this crop for fourteen years and sustaining no injury, and I was informed by a very intelligent agriculturist at St. Neot's, that a piece of land in a field had been in rape-seed for eight years, while the other parts of it had been managed with other crops, and that land which has grown the rapes is by far the best in the field. Such instances prove the crop to be an advantageous one to land, as well as a profitable one to the farmer; and were the straw to be burnt on the land, as has already been mentioned, it would be still more advantageous in every respect. The same gentleman at St. Neot's is decidedly of opinion, that landlords preventing their tenants from paring and burning, and growing rapes for seed, cause a real injury to both parties, and that the process would improve instead of injuring land; paring and burning is much

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much practiced in that parish, he therefore had the opportunity of noticing minutely the white crops of those who pare and burn, and take rapes for seed; and of those who pare and burn, and feed off the rapes by sheep, and is of an opinion that those of the former are decidedly the best; I noticed a four acre piece of rape-seed on the high lands, where it is not an usual crop, it was a most excellent crop, and was newly reaped at the time I saw it, there was not any fallow in the county more free from noxious weeds, and if the rape straw be burnt on the land I am very confident there will not be a finer or better crop of wheat in the county than will be grown on it, and the difference in profit would be from 14*l.* to 15*l.* per acre, as there appeared, to five quarters per acre or more, which at last year's price would have fetched 20*l.* per acre. These are considerations highly worthy of landlords' and tenants' observations, the difference ofexpense being not very great, between that of preparing a piece of land under summer fallow, and in obtaining the rape-seed crop, and there is a difference of from 15*l.* to 20*l.* per acre in *profit*. Generally speaking, it is very seldom that a *poor tenant* can *enrich a farm*, or that a *rich one impoverishes one*, it therefore highly behoves every landlord to give encouragement to any system which will enrich the tenant; a small check to the sapling oak may prevent the growth of what would otherwise become the monarch of the forest.

SECT. XVII.—CABBAGES.

NONE raised but for table use.

SECT. XVIII.—RUTA BAGA, OR SWEDES.

1ST, Soil; sand, gravel, clay. 2d, Tillage; three times ploughed and harrowed. 3d, Manuring; yard dung, they require one-fourth more dung than other turnips. 4th, Seed; two and a half lbs. per acre. 5th, Sort; chiefly of the yellow. 6th, Time of sowing; May. 7th, Transplanting; none done. 8th, Horse-hoeing; none. 9th, Hand-hoeing; Twice or three times. 10th, Fly; subject to it as well as other turnips. 11th, Application; for sheep and cattle. 12th, Value; 4*l.* to 5*l.* per acre. 13th, Comparison with turnips; more valuable than other turnips, as they will keep later in the spring months, when food is scarce.

SECT. XIX.—TURNIP CABBAGE.

NONE.

SECT. XX.—KHOL RABBI.

NONE.

SECT. XXI.—BORE COLE, &c.

NONE.

SECT. XXII.—CARROTS.

ONLY for table.

SECT. XXIII.—PARSNIPS.

None.

SECT. XXIV.—BEETS.

None.

SECT. XXV.—POTATOES.

For table.

SECT. XXVI.—CLOVER.

1st, With what crops sown; with barley chiefly, in the fens sometimes with oats. 2d, Manuring; only one instance of being done in the county, the wheat crop much better for it. 3d, Seed, from twelve to eighteen pounds per acre. 4th, Time, generally sown with the barley. 5th, Use; mown by some once, by others twice, fed, by sheep after being once mown. Soiled, a good deal for horses. Seeded, great deal of seed raised. 6th, Which the best preparation for wheat; mowing, which should be done twice. 7th, White; this has of late years been introduced into the county, and is here called Dutch clover; it is much approved of, not only for its natural durability, but because it is found to bear drowning, which is not the case with red clover. 8th, Is the land tired of clover? I heard

I heard no complaints of this nature. 9th, In that case what variation of course? taking pease or beans instead of clover, after barley.

SECT. XXVII.—TREFOIL.

1st, Soil, sand, gravel, clay, or stony lands. 2d, Manure; none. 3d, Seeds sown with red clover and rye-grass six lbs. per acre. 4th, Time, after the barley and oat crops. 5th, Application; mown with other seeds, fed with other seeds. Seeded, none. 6th, Duration; three or four years.

SECT. XXVIII.—RAY-GRASS.

1st, Soil; sand, gravel, clay or stony land, fen land. 2d, Manure; none. 3d, Seed, one, two, three or four bushels per acre. 4th, Time; sown with the spring crops of barley or oats, and sometimes on wheat in the spring. 5th, Application, generally fed, made into hay when mixed with other seeds. Seeded very little duration, four years on good land, two years on poor land. 7th, Prepares for what crop; chiefly pease or oats.

SECT. XXIX.—SAINFOIN.

None.

SECT. XXX.—LUCERN.

None.

SECT. XXXI.—CHICKORY.

SECT. XXXII.—BURNET.

Soil; clay. It is only sown in two parishes in the county, where they have sown it with other seeds in the spring, and mow it for hay; its duration not known.

SECT. XXXIII.—HOPS.

There is a hop ground of seven acres at Midloe; the kinds of hops which have been planted there, are the red, the green square and the white; the two latter sorts have not answered, and have been taken up, with an intention of planting the red sort in their place; each hill or stock of hops is three feet asunder; the preparation for planting them is to plough and pulverize the land well, then make the hills similar to those made by gardeners for cucumber beds, then three hop plants or roots are planted on

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on each hill; after they are planted the hills must be ploughed between, in order to keep the land clear of weeds, which must be strictly attended to; there is no produce the first year, consequently the hops are not polled the first year, but are the second year, though it is not very common to have any produce then, but these at Midloe, bore thirteen cwt. in that year; after pulling the hops nothing is done to the ground until the spring, when the land is ploughed from them, all the roots which appear being cut off, or they would extend in such a manner as totally to prevent the process of moulding the roots or keeping the hills up, the roots are then dunged. When land is of a proper kind for hops, with proper knowledge in their management, and due attention, they will stand forty or fifty years. This hop plantation is planted with three hundred and thirty-six apple trees between the hops. Hops have also been planted at Southoe, but it appears from some cause or other they did not answer, as the hops are destroyed, and the land is now applied to other agricultural purposes.

SECT. XXXIV.—HEMP.

SOIL, loam or warp is the best; warm rich sand, gravel or any rich swards. Tillage, one ploughing. Manure, none. Seed, three or four bushels per acre, according to the strength af the land. Sowing, broad-cast, and then harrow the earth very fine. Time; the last week in March, or first week in April, it ought to be sown in mild open weather, the time of sowing must vary according to season and situation. Pulling and tying; first part of it in the beginning of August, the latter in the last week of September. Watering; is done in pits, rivers or ponds, according to situation. Time; there cannot be any stated time, this must be known by taking some out of the pits, and if the bass divides from the bunn, it is then ready, and must be taken out immediately. There is but very little of this article grown in this county, though there is a great deal of land adjoining to the fens where it might be grown to very great advantage, while, at the same time that it would yield a great profit, it would be a much better preparation for a wheat crop than a summer fallow. It has been supposed that even *grassing* hemp on land left a kind of manure on it, but from the experiments which I have seen tried, or tried myself, I believe that any *other substance* would have the like effect; but as it is required in the natural process attending hemp, that it should be laid on land, *two birds are killed with one stone.* As it has always been observed that where hemp has been laid to wither, that such spaces of land have borne better crops than other lands adjoining, it follows that if the land where the hemp was grown, was to have its own crop laid on it to wither, it would be benefited thereby; thus so far from hemp injuring land as is often supposed, it would prove a real benefit. As a convincing proof of this I mention that, being in Norfolk, I was shown by Sir John Sebright's steward a crop of wheat which was growing on a piece of land, which had been under preparation for that crop in the summer before, and on the middle of the field there had been laid some hemp for the purpose of withering it; the square space where the hemp had laid was clearly discoverable, and the wheat growing there, was not only stronger in the straw, but finer and much heavier in the ear. This happened before I went to America, and from it, as may be seen in my first edition of the Experienced Farmer, I had formed some idea of the very great utility of exsupply of dung for their own purposes. There are nevertheless many places where hemp, wheat, and beans might be taken to eternity, as where land is of that very superior quality at the beginning, two of those crops so overshadow the land, that neither sun nor wind can penetrate to it during the hot months, both hemp and beans being in full leaf during these months, and then it is but exposed during the cold winter months, greater part of which time exhalation is prevented by snow or frosts. This is a great reason in favour of the hemp culture, but there are still further reasons for its being a good crop for land, where it is of a quality proper for its production ; it is to be observed that four bushels of hemp-seed is very thick sowing, six of such seeds not being larger than one bean, and that the leaves of hemp are much more smothering than those of beans, and also that in its early stage it grows so remarkably thick, that it shades land much more than any other crop ; the leaves of hemp are also so numerous and very broad, that a great part of the rains and dews which fall is taken in by the leaves for the support of the plant, and the land is kept dry under them, (as an illustration of this particular point, it may be proper to observe that this is the case under large trees from their taking in the dews and rain by their leaves,) so that if the land has been well prepared and weeded, it will be a total impossibility for weeds to grow under a hemp crop. I have known an instance nigh Wisbech, of hemp being sown on land where many of the couch roots were left in it at that time, and when it came to be pulled, the roots of couch were nearly all destroyed. Upon conversing with the farmer to whom this land belonged, he informed me that he had had that land for many years under hemp, wheat and beans, that during the time it was under the two latter crops, it got to have couch in it again, but that the hemp crop always destroyed the couch: this he thought was effected by the natural *quality* of the hemp; this was, however, by no means the case, and arose only from its being very thickly planted, for had it been planted at *the distance* which it is necessary to plant *beans*, that they may prove productive, he would have found that hemp would no more kill couch, than beans would. An experiment in destroying couch may be seen in my English farming in Ireland, arising from very *thick sowing* of the *pea crop*. Further advantages arise under the hemp crop, both in preventing and destroying weeds, from its standing at first so very thick on the ground, not more than an inch asunder; it is then weeded by hand, thus the land gets then well trodden, which is of very essential benefit both to the crop and the land; it gets trodden a second time at the first pulling of the hemp, which is very destructive to ground weeds, should there happen to be any, and to the couch roots, which latter may be observed to be always killed where land has been much compressed by the wheels of carts; then after this first pulling, the hemp which remains increases very much in leaf and substance, shading the land very much and keeping it dry, so that altogether, as I have before observed, it is next to impossible for any weeds to remain; the land then gets another treading at the second pulling of the hemp; another very material advantage attending this crop is, that it is always pulled up. In the bean crop, it has been found very prejudicial to leave the roots in the land, and the succeeding crop has proved very light in consequence; this arose from the land being by those roots (which of a heavy crop are as hard as wood) kept too light and open, so that during winter so much wet penetrated into the land, that both the land and the roots of the wheat were completely starved, and in spring by the same rule, the land became drier than it should be, and the wheat root welted. Land can certainly be scarcely made too firm for a wheat crop, leaving it *light* or *open* being the greatest encouragement to all reptiles, which are so destructive to crops, as well as the disadvantages above mentioned. From the roots of beans being so very injurious to succeeding crops, I infer that the roots of all white crops must be so too in a smaller or a greater degree, and that therefore the highest benefits would result from pulling up all stubbles, and either burning them on the land, or carting them off into the fold-yard, where from the earth which would hang to the roots, the dung and treading of the different animals there, a very beneficial compost would be made, as well as the land being materially benefited in the first instance by the removal of the roots of the stubble. I have been induced to make these remarks as an encouragement to the growth of hemp, where the soil is adapted to it, as wherever I have viewed land, where hemp, rapes for seed, flax, mustard, and such like crops have been grown, I never yet saw it *impoverished* by such processes, and that whatever might be the state of those lands when the system was begun, at the time I viewed them I always found them still very far to excel. The only danger I foresee in the system, *where land will produce hemp, wheat, and beans*, is that from the straw of the two latter crops, and the stubble, roots, &c. being all carefully collected and made into compost, there would at least be twenty-five loads, being five loads a year, and as the bean crop would be the only one to which the dung would be applied, that the land would be made over rich for the wheat crop, so that except it was very thick sown, the land trodden during winter by cattle or horses, and eaten by sheep, would be liable to the mildew, and other maladies. But let land be ever so rich by the method just mentioned, and bush-harrowing in the spring, very profitable crops might be raised, as the straw would thereby be shorter, the heads of the corn more square, the grain much better filled, and more of one kind, as in all tillering crops, from the stems rising one after another; some being formed in November, others in March, April, May, and June, common reason dictates that the sample must of course be of many sorts.

SECT. XXXV.—FLAX.

SOIL; loam, wharp, sand, gravel, good peat earth, and almost all good, or even middling soils, of *sward land* chiefly. Tillage; ploughing, harrowing, rolling, and treading. Manure; none. Seed; from two to three bushels per acre, according to the quality of the seed, goodness of the land, or whether intended for seed or for fine flax. Sowing; broad-cast. Time; the land should be ploughed early enough in the winter to have the benefit of the frost, and should be sown in mild weather, at the latter end of March, or beginning of April. Weeding, from *2s.* to *10s. 6d.* per acre, which depends on the quantity of weeds. Pulling and tying, *10s. 6d.* per acre. Watering, *10s.* per acre; pits or ponds of soft standing water being the best for it. Rivers or running streams not being proper. Time; none can be fixed, as it depends on both the weather and water; the method of knowing when it is ready to take out of the pits, is the same as for hemp. Grassing. *10s.* per acre. Binding and carrying; *10s.* per acre. Breaking, *12s. 6d.* or if the

the

crop be very good, 20*s*. Bunching and hackling; 5*s*. 6*d*. a stone, of 14lb. Repetition of the same crop; this crop is generally sown on old sward lands, when first broken up, from its not costing so much in weeding, but it will grow well on *any land* that is in good condition, and free from couch and all other weeds, which the process for it will destroy; it will grow well after barley or oats, where wheat is intended to be taken after it. The best crop I ever raised was after potatoes, which may be seen in my English farming in Ireland. There is none of this crop cultivated in this county, though there are many acres which would grow it to very great profit, as land of much worse quality will produce it, rather than hemp. Various sorts of land will produce it, and as it is a spring crop, and stands but a little time on the land, other crops such as cole for spring food or seed, where oats are intended to be taken, may be put in after it. It is advantageous where land has not been long enough in sward to pare and burn, as a preparatory crop for wheat; as the process attending flax crops has a great deal of treading, &c. in it. As soon as it is sown it is rolled, and then during the weeding of it, it gets very hard trodden. This crop being, at the time it is ready to be weeded, fit to cover the land, any further progression of weeds for that season is prevented in the most astonishing manner, and although the expense seems to be very great, yet it is amply paid for in treading the land, but by its real service to the crop. When I first grew flax, there being great numbers of ground weeds in it, I was much afraid that treading on it would destroy many of the plants, but to my great surprize after the first shower of rain, it seemed to spring up more rapidly for the treading. Ground weeds do not injure flax at all in its early stage, but are indeed rather of service to it, so as the land is *but* *weeded in time*, and therefore if it be a large field of flax, it requires a great number of hands, for if the weeds remain too long they will very much injure the crop; then when it is ready to pull, the land is again much benefited at that season by the treading: after this some let the small weak plants stand for seed, and then mow the flax, grass and such like which spring up with it altogether, and it makes most excellent fodder for milch cows, or any kind of cattle. From better wheat crops having been obtained after this crop, than after summer fallows, it has been imagined that it was from some quality which flax had of itself beneficial to land, but this is not the case, it certainly proceeds from *shading and treading* the land. I do not think that flax is so beneficial to land as hemp, without an immediate successive crop; for the latter remaining longer on the land, and therefore affording shade longer, has been proved to be the more beneficial crop for succeeding crops. All green crops are in consequence very beneficial; and, as it may be observed under the head rapes, that all the succeeding crops were better where that crop had stood for seed, I wish to inculcate the propriety of never letting land lie idle, but as soon as one crop is off to have another in the land.

SECT. XXXVI.—LIQUORICE.

NONE.

SECT. XXXVII.—CHAMOMILE.

NONE.

SECT. XXXVIII.—TEASELS.

NONE.

SECT. XXXIX.—CARRAWAY AND CORIANDER.

NONE.

SECT. XL.—SUNDRIES.

UNDER this latter head comes a very profitable and beneficial crop, Mustard-seed, which is cultivated in this county, with great success. Soil; rich loam or good old pasture land, mellow clay, very good fen soils. Tillage; ploughed once. Time; between Candlemas and Lady-day, as the season and situation may serve. Seed; two quarts per acre. Sort; there are two kinds, the black and white, the former of which is most esteemed. Harrowing; the land should be bush-harrowed, and the seed sown as soon as the land is ploughed, the bush-harrow should be a light one, on account of the smallness of the seed. Weeding; done by sheep, which will not eat the mustard; the thistles if any being cut out by a spud. Reaping; by the hook or sickle, and done while the crop is rather green; it is ready to tie up into sheaves four days after it is cut, when, if dry, it may be stacked, which should be done in fine weather; if it be proceeded with as rape-seed is, it is apt to turn white; and the seed ought to have a reddish brown cast. After it has been stacked for a short time, it may be thrashed, but it will be better and more properly cured, if it remain in the stack for six or nine months. Thrashing; is done in the field in the same manner as rapes, or may be done in a barn. Produce, from twenty-eight to forty-four bushels per acre. Price, from 10*s.* 6*d.* to 21*s.* a bushel. As the price of this article is very fluctuating, if it should be low at the time of reaping, or rather when it is fit to thrash, as it is safe stacked, it will keep, and a good price may perhaps be obtained; for as it is injured by frosty nights at the time it is in blossom, similar to rapes, it often rises at such times in price. There have been many prejudices against this crop, on account of its being said to injure the land; but upon a view of those parts in this county where it has been grown, I did not find it to be the case; and I am of opinion that were the stubble and straw carefully collected and dispersed in equal portions over the land, that it would become a great improver, and be a good preparative for wheat, another very profitable crop. There are also prejudices against it, on account of its being said to grow again, and to impede the following crops; but these also seem to be erroneously founded, though to be sure the seed will lay in the ground for many years and never go to decay; for it is said that in the county of Durham, where a fresh ditch happens to be made, and fresh earth raised, especially on good land, that mustard will grow, and this is said to be the reason why the best mustard bears the name of Durham mustard. It is to be observed, however, that it will only grow on very rich land, but had I land of *my own*, I should certainly try it, if it was good enough with mustard, as a good crop of it will in some years make 40*l.* per acre, and sometimes more; when the land itself would perhaps only bring 50*l.* per acre. The cost of the seed per acre is but about 16*d.* the land only ploughed once, only a slight bush-harrowing, weeded by sheep, and is not more than five or six months on the land; the risk is therefore nothing, and I am convinced, as I have before stated, it is not injurious to land, for the same reasons which hemp and flax are not, and it is also a good preparation for wheat, taking care, as I have above hinted, to burn the straw and stubble.

SECT. XLI.—ARTIFICIAL GRASSES.

Abbotesley—Red clover, four or five acres on every farm.
Alconbury—Red clover and ray grass.
Alwalton—None.
Barham—Red and white clover, and ray grass.
Brampton—Red clover and ray grass.
Brington, Broughton, and Buckden—Red clover.
Buckden—Ray grass, and red clover.
Bury—None.
Bythorne—Red and white clover, trefoil, and ray grass.
Catworth—White clover, trefoil, cow grass, and burnet.
Caldecot—Red clover.
Chesterton—Red and white clover, ray grass mown.
Coln—None.
Conington—Red clover, and ray grass.
Covington—Red and white clovers, ray grass, and trefoil.
Denton—Red clover mown, but sometimes eaten.
Doddington—Red clover, and ray grass.
Easton—Red clover.
Ellington—Red and white clover, trefoil, and ray grass.
Elton—Red and white clover, trefoil, and ray grass; chiefly mown the first year, and eaten the next.
Everton—Red clover, and trefoil.
Eynsbury—Red clover.
Farcet—Red clover to stand for seed, ray grass, white clover and trefoil for sheep-feed.
Fenny Stanton—Red and white clover, trefoil, and ray grass.

Fletton—Red and white clover, and trefoil.

Folkesworth—Red clover mown.

Gidding Magna—None.

Gidding Parva—Red and white clover, and ray grass; when intended to be for any length of time.

Glatton and Godmanchester—Red clover.

Graveley—Red clover and ray grass.

Graffham—Red and white clovers, trefoil, and ray grass.

Gransdon—Trefoil, sown on the oats for the sheep the next summer, and then stinted.

Haddon—Red and white clover, and ray grass mown, and sometimes eaten by sheep.

Haile Weston—None.

Homerton—Red and white clover, trefoil, and ray grass, mown the first, and fed the second year.

Hartford—Red clover for laying down for three years, ray grass, white clover and trefoil.

Hemingford Grey. Red clover, ray grass, and sometimes white clover.

Hemingford Abbots—Red and white clover, trefoil, and ray grass.

Hilton—None.

Holme—Ray grass on the fen land, as water kills the clovers.

Houghton and Keystone—Red clover, trefoil, and ray grass.

Kimbolton—Red and white clover, trefoil, and ray grass.

Leighton Bromeswold—Red clover, trefoil, and ray grass.

Long Stow and Luddington—None.

Lufton—Red clover.

Molesworth—Red and white clover, trefoil, and ray grass.

Morborn—Red clover mown.

Needingworth cum Holywell—Red clover and trefoil.

Offord Cluny—Red clover, trefoil, and ray grass.

Offord D'Arcy—None.

Old Hurst—Red clover, 20lb. per acre, ray grass one bushel per acre.

Old Weston and Overton Waterville—None.

Overton Longville and Papworth—Red clover.

Paxton Magna and Parva—None.

Perry—Red clover generally mown.

Pidley—Red clover, and a little ray grass.

Ramsey—Ray and rib grass, trefoil.

Raveley Magna—Red clover, trefoil, and a little ray grass; partly mown, partly eaten.

Raveley Parva and Ripton Abbots—None.

Ripton Regis—Red and white clover, trefoil, 20lbs. of small seeds, and one bushel of ray grass per acre.

Sawtry St. Andrew—Red clover, and ray grass.

Sawtry St. Judith—None.

St. Neot's—Red and white clover, trefoil, and ray grass.

St Ive's—None.

Somersham—Ray grass.

Southoe—Red clover, and ray grass chiefly eaten.

Spaldwick—Red clover.

Standground—Red clover ; but when it is intended for land to be laid down, white clover, trefoil, and ray grass.

Stebbington—Red clover.

Steeple Gidding—Red and white clover, trefoil, ray grass, which is mown the first year, and eaten the next.

Stewkley Magna—None.

Stewkley Parva—Red clover, trefoil, and a little ray grass.

Stilton and Swineshead—None.

Stoughton—Red clover.

Toseland—About ten acres of red clover in the parish.

Thurning, Upton and Upwood—None.

Warboys—Red clover and ray grass.

Warsley—Red clover.

Water Newton—Red and white clover, and ray grass.

Wistow—None.

Winwick—Red and white clover, trefoil, and ray grass.

Witton—Red clover and trefoil.

Woodstone—Red and white clover.

Wood Walton—Red and white clover.

Woodhurst—Red clover, trefoil, and some ray grass.

Wooley—Red and white clover, trefoil, and ray-grass.

Yaxley—White clover, ray grass, and rib grass, when the land is intended to lay for any length of time, when intended to be taken up again, red clover and ray grass mown one year, and

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and eaten the next; letting clover stand for seed said to be very injurious to land.

Yelling—None.

By the above account it will be seen that nearly five-sixths of the parishes are in the habits of growing artificial grasses, a great proof of their acknowledged utility.

Though the making of hay, in this district, has nothing peculiar in it, it may not be improper to insert an account of this process, as drawn up by Mr Scott.

In the highland parts of the county, the best hay is commonly cut in July, and it is as good where the land is equally well managed as perhaps in any county in England. It is first shaken about if the weather is fine, immediately after the scythe; then turned directly, and put in very small cocks at night; then shaken about the next day, and turned as often as necessary; and sometimes carried in the third day. But if the weather be wet or showery, it stands longer. The highland and the meadow hay is managed much the same as in other counties. Some vetches are also made into hay in this county, and immense quantities of rye grass, especially in the fenny part; but the chief part of the fen-hay is couch-grass, and the hay it makes is most excellent.

The hay in the fens is commonly cut a few weeks later than the hay on the highlands and best meadows; chiefly because the fen lands are grazed later in the spring; and there are also great quantities of hay mown in the fens, and when the fens are properly managed and irrigated, or clayed, the greatest part, indeed almost all of them, will be grazed and mown, and the fens will then be the finest district for grazing and mowing in the British empire, if not in the world. They lie sufficiently near the metropolis, if the navigation from Cambridge to London were made, to send all their produce, hay itself not excepted.

The fen-hay is made in a very easy and cheap manner:

after the grass is mown, it lies in the swarth just as mown, several days, more or fewer, according to the drying state of the weather; then it is turned over, and lies several days more, till supposed to be sufficiently dried; and then it is put into moderate sized cocks, and stands till carried, and this is all that is done to it in tolerably good hay harvests. This custom was first introduced, because the fens produce great crops of hay, and the farmers were poor, and willing to get it in the cheapest manner; and the open, unshaded state of the fen lands renders art less necessary to shake the grass and hay about, than in the highland closes, surrounded with hedges and buildings, or trees or mountains. And as the hay made in this cheap artless manner appears to grow and feed the stock, as well as hay shaken and turned about ever so much, and especially as it is so much cheaper, the richest farmers, and even the fen gentlemen on their own lands, continue to make their hay in this easy cheap mode.

Indeed after many years observation, although I have formerly written against this mode of hay-making, I now believe that when hay is dried gently, without being too much exposed to the burning rays of the sun, that it retains more of its valuable juices; that it is much more nutritious, and palatable to cattle, and much better than when over fiercely dried in the modern mode of shaking it much about, and turning it frequently over.

In the highland parts of this county, the hay is stacked very well, and in much the same manner as in other counties; but in the fenny district, the hay is frequently put up in round stacks, and the roofs well raked down, but seldom thatched; this wasteful practice is continued, chiefly owing to the great abundance of hay in the fens.

CHAP. VIII.

GRASS LAND.

SECT. I.—MEADOWS.

ON the borders of the river Ouse and Nene are some very fine rich meadow lands, which cannot easily be made more productive than they are. The general method of making hay in this county is the Lincolnshire ; the produce in hay being about three fourths of a ton on an average per acre, and the expense of mowing, making, and stacking, 10*s*. 6*d*. per acre.

SECT. II.—PASTURES.

THE following calculation will shew the profit on an acre of land of the poor clay soil, when managed to the very greatest advantage.

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Dr. Expenses.	£	s.	d.	Profits.	£	s.	d.
Rent, assessments, and expenses of shepherding, &c. &c.	1	7	0	Two fleeces of wool, 7lb. each at 1*s.* per lb.	0	14	0
				One lamb	1	5	0
				Keep of one head of cattle at the rate of one to four acres	0	5	0
				Keep of a horse four months at 3*s.*	0	12	
					2	16	0
				Deduct expenses	1	7	0
				Nett profit	1	9	0

From the above it appears that 1*l.* 9*s.* is the profit which one acre of land, such as has been described under the head Expenses and profits, will produce, being for two hundred acres of land 290*l.* By referring to p. 122, it may be seen what such land might be made to produce.

It is calculated that the fattening land in this county will carry about thirty stone of meat, fourteen pounds to the stone, per acre.

One very great reason, for the land of this description laying in pasture in its present very neglected state, is to be attributed in a great degree to its laying so *very remote from the farm buildings;* from which circumstance, were it to be pared and burnt, and improved as I have suggested, and crops of corn grown, as it is frequently the case that the barns are from one to two miles off, and the roads on such soils are very bad, it would prove not only very troublesome and tedious, but very expensive. Another very material consideration would be, that the manure, from the abovementioned causes, would very rarely find its way back to the land from whence it was produced, and thus it would be said that paring and burning had injured the land. Where, therefore, there is a sufficient quantity of land of this description lying together, it ought to be made into a farm and have barns and stables built upon it; the owner would then be a material gainer, for the occupier could certainly well afford to pay proper interest for the erection of such buildings, and the results would be truly valuable to this county at large, and indeed to the the whole of the community.

Another thing which I have to observe is, that where these pastures are obliged to be kept in their present state, that they should certainly be subdivided, which would very materially benefit the occupier and the produce of the land; as the drains which would thus be made by the subdivision ditches would be the most effectual means of laying the land dry. In many of the pastures, which are large, there are large hollows in them, or if not, and they lay level yet, as the water from the nature of the soil can only drain on the surface, it lays a very long time frequently on the land, by which it is very materially injured; when by the method I have recommended, as the ditches would be much nearer together, the water would much more readily drain away, and thus more land would be very materially benefited. I observed one very good method in the pastures of several parts of this county, to prevent sheep from getting overcast. Two posts are placed ten feet apart, and a strong rail fastened to them, against which the sheep can rub their backs, by which means it is very seldom they have any sheep overcast; a very great advantage. I should recommend the posts to be made so that cattle would rub against them, as much expense would be saved thereby, such as having gates, fences, hedges, &c. broken down.

CHAP. IX.

GARDENS AND ORCHARDS.

THESE are in this county generally very small, and nothing particularly worthy of notice in them, except where it occurs in the following list.

Buckden—All gardens small, except at the Bishop of Lincoln's Palace. Coln—Rather large. Conington—They generally consist of about one rood each. Doddington—Small gardens and orchards are given to each cottage. Easton—Small, except a newly planted orchard of about four acres. Elton—All very small except Lord Carysfort's. Gransdon—Apple trees will not thrive or bear fruit. Hemingford Grey and Abbots—At these two places they are very large, and at the latter place there is one orchard of ten acres. Houghton—They are large. Huntingdon. A nursery of eight acres. Kimbolton—Small, excepting the Duke of Manchester's. Leighton Bromeswold—An orchard of two roods has been planted to each farm here by Mr. Norris. St. Neot's—A garden containing twelve acres. Witton—They are large, and at Yaxley, though small, are generally very productive of fruit, &c.

On this subject Mr. Scott observes that within these few years past, many fruit trees and small orchards have been planted in many of the highland parts of the county, and some in the fens. About ten years ago, the late Jonathan Ilett, Esq. planted a fine orchard on fen land, with most sorts of the best fruit trees, and they thrive and prosper much, and bear well. And so they would in all the fens, now they are well drained. In the year 1806, William Margetts, Esq. of Huntingdon, planted on his estate in the parish of Somersham, an orchard of sixteen acres of land, with all sorts of the choicest fruit trees, apples, pears, plumbs, and cherries; on the outsides of which is a border of red filberts, mixed with orlean, and green-gage-plumbs; and the western side is planted with swan-egg pears, to preserve the orchard from being injured with the west winds. The land betwixt the rows of fruit was ploughed and sown with wheat. In a close also adjoining to Mr. Margett's orchard, in that same year (1806), the Rev' John Ingle, a dissenting minister, planted an orchard of eighteen acres, with all sorts of the choicest fruit trees, which are bordered round in the same manner; the trees are very healthful and promising. The soil is a loam, and unless the substratum is unfavourable, there is no fear of their thriving.

CHAP. X.

WOODS AND PLANTATIONS.

WITH respect to these, a former report observes, "The county is rather thin of timber, which may be imputed to the very great demand for it in the fens. The underwood is sold at a higher price per pole, considering the uses to which it is applied, than in most other counties; and this I take to be the natural consequence of a small stock of timber; for I believe it is a well founded maxim, that if woodlands are very full of timber, the underwood cannot be very profitable. Woods that I am well acquainted with, have produced near 20*s.* per acre, per annum, as long as I can remember; while the adjoining fields of as good or a better quality, are let at an improved rent of about 15*s.* or 16*s.* per year." For the following information respecting grubbing up wood, of which much has been done at Kimbolton, by his grace the Duke of Manchester, I am indebted to Mr. Welstead his grace's steward. "In compliance with your request, I must tell you I cannot answer to any great degree of certainty, what the woods may have cost grubbing up; the men took up the roots by the piece work, the roots made about 12*l.* or 13*l.* per acre, *which sum*, as near as I can judge, cleared all the expenses. The land was ploughed immediately afterwards and sown with oats, and generally produced oda good ɹɔ" Spinneys stand thirty-five years between one cutting and another, and pay 40*s.* per acre. There has been a very great neglect in the planting of timber on the new enclosures in this county, which may be attributed to the prejudice which too generally exists against planting in the hedge-rows, which I must say is a very ill-founded one; for from experience and observation I am decidedly of opinion, that in such parts as timber will grow to perfection, where land is enclosed into fields of from ten to fifteen acres with quick thorn hedges and a timber tree at every ten yards, in fifty years such timber, especially if it consist chiefly of elm, would *buy the land*, and I am further convinced that such trees do not only ornament an estate very much, and give it the appearance of, but really give it, *fertility*. There is scarcely an instance where timber has been anciently planted, but that the land so enclosed and shaded by it, is of a much more fertile quality, than land in an open and exposed state. Timber trees naturally break the wind from, and afford *shade* and *warmth* to, the plants growing in the enclosures. Do we not frequently hear farmers say, when there are high cold winds, that "the weather will *bunch*[*] all the grass away:" therefore is it not strange that where a *prevention to this complaint* is so easily to be had, with so *very little cost in the beginning*, and so *great profit in the end*, that it is not always had recourse to; but so strong is the outcry and prejudice against the practice of planting, that I do not doubt but many on reading this my recommendation of it, will become angry and very much condemn me; but this has almost ever been the case in some degree to the first suggestion of improvements; I only beg those, therefore, who give way to such emotions, on reading this, to cool and then consider the matter, taking a view of the different fields in their own or the adjoining parishes, which should happen to have any large timber trees in the hedge-rows, and of those not so circumstanced, and see whether they do not find the grass or plants growing within the former, much *finer* and *forwarder* than in the latter. It may be said that no land but what is very rich, will produce large timber in the hedge-rows; but this is a gross mistake, for I know many instances of land growing good timber, which is far from being fertile; and I also know land with a white clay bottom, which is very good corn land, which will not grow timber to perfection. But even in this last case, there might be ash and elm trees planted for pollards, which are very valuable, and I am really of opinion, that if an exact account of what was produced by them was kept, that at the end of one hundred years, as great a profit would be brought in by them as from fine timber trees; therefore, view the subject in whatever light or way I may, I cannot but think it highly commendable, proper, and advantageous, to plant timber in hedge-rows. I never saw the necessity of it so much, until I had the honour to be employed by the Board of Agriculture; for by going through a county, parish by parish, I cannot but observe the difference in appearance of land, which, when in an open state or not timbered, though naturally of the same value, has a dreary uncomfortable look with it, and of lordships which have been enclosed for fifty or one hundred years, which have so pleasing and rich an appearance; and when I can go into a ten acres piece of land, and can there often count from forty to one hundred trees, which valued roughly at from 3*l.* to 5*l.* a tree, produce on an average in some instances, a sum equal to the fee-simple of the land I then find something more pleasing than show; for here is the reality of the greater value of the land; therefore considering myself to be employed both for private and public good, I cannot but think it my duty to point out any improvement which suggests itself to my mind as necessary; I particularly point out this, for although it may have escaped the land owner's attention at the time for enclosing, it is not too late yet; if this improvement was to be attended to, on many enclosures where there is not a single tree planted, there might, in the course of from fifty to one hundred years, be a sum raised from timber, equal in many instances to the fee-simple of the estate. Though timber certainly takes up a space of land near to the hedge, I yet think that the tenant would be equally benefited with the landlord, being very certain that when the trees got up, the shelter which they would afford to grass or other plants growing within the enclosures, would amply compensate him for the loss of land near the hedges. Where elm grows well, I certainly recommend it in preference to oak, for planting on *hedge-rows;* on account of its coming to perfection in half the time, that it grows straighter and higher, and is better for having the side-branches lopped off from it when young; it is also for many uses better for being curved or knotty, which is not the case with oak or ash, especially the latter, which being intended for chaise, waggon or cart shafts, hoops, axle-trees, &c. must be free from knots to be of value; this is also the case with oak, when used for the spokes of wheels or planks for shipping; and must therefore then be bent, so that if knotty it would break, and must be sold frequently at inferior prices, for inferior purposes. But if one oak was planted at every thirty yards, supposing two elm trees to one oak, it might be advantageous, not that oaks would thus be grown straight, because they need other trees to shade and draw them up; but as much *crooked* timber is wanted in ship-building, there might thus be many useful oaks grown. I do not mean that this method of planting should supersede the planting so generally recommended in the angles of fields; on the contrary I highly esteem that practice, as being both ornamental and useful; there are many kinds of trees which might thus be very profitably and properly planted, and which would afford at an early age good shelter for young oaks, as Scotch fir, larch, &c. with birch, aspens or poplars, and ash trees interspersed among them for underwood, many of those last mentioned trees being of but little use, but as I before said for shelter for the oaks, and after that to burn; or for rails in the new enclosures, or for some trivial farm uses; for as to building with that kind of timber, I know it to be a very bad practice, as it soon goes to decay, and is not worth even the labour for putting into barns, stables, &c. They are however of real utility for shading young oaks, and as they and the other timber trees want room, there is a profit attending the taking of them out: it is a very good method in this kind of planting, to plant many ash trees, sallows, hazels, &c. which will spring again from the stools when cut. In the fens of this county, the willow is very much planted, and prospers amazingly; it would therefore be highly commendable to plant many more of them than there are, and if the timber willow were to be planted there in the angles of fields and such like places, in course of time, perhaps, rooks might be induced to build in them, which birds are much courted in the fens, from their destroying vast quantities of the grubs, so destructive to crops. It may not be improper here to say a few words respecting rooks; on my farm, at Slane in Ireland, there was the largest rookery I ever saw, and I was far from finding them do me any damage, for in fine weather they used regularly to fly, seemingly to very great distances for their food; in foul or stormy, or wet weather this was not the case: now as the author of an ingenious publication on the grub, has discovered that those reptiles leave their cells in this kind of weather, it is certain that rooks are of most essential service in devouring them at such times, which partly accounts for rooks staying near home at such times, their instinct teaching them that food will be provided for them there; I could always have a very near guess what kind of weather it would be from the rooks at Slane, for if they sat on the trees after sun rise, although it might then have every appearance of being fine, yet it was certain to be rain all or greatest part of the day, when that was the case; I have known many instances of the vulgar prejudice against rooks having been overcome by facts, especially in one instance which I have recorded in the Rutland report, which happened near Long Sutton in Lincolnshire, where a most extraordinary crop of oats was raised; they were sown early and were nearly covered the whole of the time until they came aboveground, with rooks, which seemed so industriously employed, that all passers by thought of course there would be *no oats left*, but in this they were disappointed, as there never was a finer or more prolific crop mown; thus then it was evident what the attention of the rooks was attracted by, and also that had they been kept off the land, what would have been the consequence. Rooks always prefer grubs and worms to corn, which latter they only casually take, or at a time when the former are not to be had, and nothing can be more absurd, than as is frequently supposed that they will eat turnips, clover, &c. for wherever they pull these up, it is but in search of what would do damage in a tenfold degree. To return then to planting, so as to obtain rookeries when they are so much needed in the fens, it would be necessary to plant from five to ten acres or more in one spot with aquatics, such as oziers for baskets; to do this it would be necessary to trench the land into three-feet ridges, planting the greater part of the oziers on each side of the ridges, and some on the ridges, as oziers pay well, making five guineas per acre for many years; then the trees intended for timber should be planted on the ridges, as they would grow and thrive much better there on account of the land being by that means so well drained; for the expense of which the oziers would amply compensate. The trees thus planted for timber should consist of the timber willow, some ash, alder, aspins or Lombardy poplars, by which means a greater chance would be given for some of them to arrive at perfection for timber, and would also form an experiment, respecting what kind of timber would thrive the best on those fen lands, and I think it is very probable that no crop which is grown there would pay better per acre, besides the probable advantage of raising rookeries. This may to many seem to be too much a work of time, but it should be recollected that Great Britain itself did not arrive at its present happy pre-eminence among nations *all at once*, but that, that was perhaps foreseen by some many ages ago, and that there were then perhaps those who looked upon it, as too much a *work of time* ever to be realized. Had all our forefathers then rested content in this last opinion, what would have been our present situation? the inference I wish to draw is so obvious, that I need not dwell longer upon this subject, but leave it to every reader to draw his own from what has been advanced.*

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[*] A provincial term for starve.

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* Mr. Scott recommends that oak and other timber should be raised in the angles of all new enclosures, that are planted with

white thorns; as it would be attended with very little trouble, and no additional expense in fencing. It would only require the inward posts and rails, or fences that are to keep the stock from browsing the white corn, or other quick fence, to be drawn in a little.

The white thorn or other quick fence, to be put down any desired distance from the others, more into the new enclosure, in the inward part of the angle or corner of the field; which instead of increasing, would lessen the length of the inward fence, and such angles of land unplanted, are of very little use either for grain or grass.

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CHAP. X.

WASTES.

FENS AND MARSHES.

IT is said in a former report that the fen lands in this county consist of about 44,000 acres (including lakes) and form about one seventh of what is called the great Bedford level, of which more than 50,000 acres are wholly unconnected with the county now under consideration, as they are drained by a different outfall. Of these 44,000 acres, about eight or ten thousand acres may be called productive, but even these are kept, if kept at all from inundation, at an expense which is equal to two-thirds of the rent, and are at all times in a state of extreme hazard. My information on this head, collected in every parish, does not give me more than 17,000 acres, inclusive of woods, &c. which comprise 4,600 acres, leaving 12,400 acres, consisting of what was given to me as commons, heath, fen, waste, &c. (including lakes), while the former report makes it amount to much more as waste; this must therefore go to shew that there has been much improvement since the publication of that report. The following remarks on the defect of drainage are extracted from the last report by George Maxwell, Esq. "It may seem paradoxical, that the fens of Huntingdonshire, whose surface is comparatively high, should be worse drained than those which lie between them and the sea; the surface of which last being considerably lower, the natural supposition being that water will inevitably fall from the higher to the lower level. But this is the case with all the fens that are upon the skirts of the highlands, and proves only that the general drainage was executed upon principles fundamentally wrong. In truth, let what will be advanced to the contrary, there was not a proper outfall to the sea, at the time of the general undertaking to drain the fens near a century and a half ago; and ingenious men employed themselves, not in obtaining an outfall, as they ought to have done, but in constructing large drains and high banks within the boundaries of the fens, expecting that the water would force its own passage in spite of every impediment, though the distance between the fen and the sea, was from ten to fifteen and twenty miles. This not being the case, ingenuity was then set to work to invent engines for the purpose of throwing the water from the lands into the internal rivers; still it did not find its way to the sea, but overtopped the banks or broke them down by the weight of its pressure; to this moment, instead of resorting to the outfall, the engines have been increased in size, and the banks raised still higher, so that the water which if there had been an outfall, would have found its way to the sea, and if left to itself would have rested on the lowest of the land, has been forced in a retrograde motion, over the surface of the higher lands; and hence the deplorable state of the Huntingdonshire fens. It is a state which every one must lament, while those who have constant intercourse with the inhabitants must feelingly sympathize in their occasional distresses." I feel very happy in saying that I heard no complaints in this respect, it is therefore probable that since the publication of Mr. M.'s report much has been done in alleviation of those distresses, though much further still remains to be done. The extent of heaths in this county, as given to me, are one hundred and sixty acres.

CHAP. XII.

IMPROVEMENTS.

SECT. I.—DRAINING.

THE following are the very excellent remarks on the subject of the improvement of the drainage of the fens, with the appendix, by George Maxwell, Esq. as published by the Board of Agriculture in the year 1793. "A very great improvement has been brought about in part of the fens of Lincolnshire, Cambridgeshire, and Northamptonshire; which directly applies by comparison, to those which are now either in a precarious or unprofitable state, and I think it my duty not to let so material a fact go unexplained in a work of this nature. The three counties last mentioned, and the county now under consideration, meet nearly at a point, so as to give each of them a share of an immense level, containing 600,000 acres, of which the great Bedford level forms a part. The great Bedford level is sub divided into three, which for distinction-sake are called the south, the middle, and the north levels. The north level is situated north of the river Nene, and, conjointly with the waters of other great parts of the 600,000 acres, its waters are discharged not into the river Nene, but into the bay, called Metaris Æstuarium at a place below the town of Wisbech, where those waters meet the waters of the Nene This place of confluence is precisely one of those points, which I have before had occasion to observe, ought to have been the object of attention at the time of the general undertaking, instead of forming projects with the waters in their passage, through the levels, at a great distance from the outfalls which was unfortunately done. The consequence of this mismanagement, so far as it concerns the lands draining into Wisbech outfall, and the navigation from Wisbech to sea, is fresh in every one's memory, who is at all acquainted with the country. Suffice it for me to say, that the lands were almost in a constant state of drowning while the navigation to the sea was nearly lost; happily for the country, happily for trade, for the navigation, for the landed interest, and for the consumer of goods, a man of sound understanding and unwearied diligence became the leading agent to a princely estate, consisting altogether of fen land, which should have been drained through the Wisbech outfall, at the very time when this deplorable state of the country, and of the navigation, presented itself, while by the greatest good fortune the resident agent happened to be one who had studied the constitution of the place, and knew exactly what remedy was wanting to be applied. The active minds of these two worthy men were set in motion, and a plan, founded upon true principles, which would have secured the navigation and drainage for ever, was submitted to the public. Plain as the matter was to any man of common sense who would take the trouble to enquire, the merchants of Wisbech opposed the scheme. *What! ruin the navigation by lessening the indraught of the tides, when it is a certain fact that the width of the indraught alone enables us to navigate at all? What! tax our land, already worth nothing?* was the general cry; and the plausibility of their objections had a weight which they were certainly not entitled to; for the true reason of the opposition was neither more nor less than the narrow-minded *prejudice of a very few merchants, who, dreading a competition in trade, were anxious to keep things as they were, and who had interest enough* *with some owners of fen lands to obtain their assistance.* But Mr. Palmer and Mr. Wing were not to be driven from their point, though thwarted so much as to be obliged to drop the plan for the present. They watched an opportunity, and without consulting the merchants of Wisbech at all, they got a clause inserted in an act of parliament, which was about to be passed for another purpose, enabling themselves at the expense of part of those lands which drain through Wisbech outfall, to execute not the whole but a small part of their plan. The work has been done, and mark the event;—the lands in question are improved almost beyond belief; they are, in fact, converted from a state of very small profit in most cases, in some of none at all, and in others of absolute loss to the proprietors, to one of the most fertile and best productive tracts that can be found of the same extent within his majesty's dominions; while the trade of Wisbech, in consequence of an improved navigation to the sea is so much increased, that the amount of its customs is more than four times what it used to be; and the inhabitants of the northern part of Huntingdonshire, and of great part of the county of Northampton, have the satisfaction to know and to feel that they can be supplied with such consumable goods as they want, without depending altogether upon the Lynn merchants, whose management no longer since than last winter, would have starved the country to death for want of coals, if there had not been the port of Wisbech to resort to. Nay more, a tract of country in Lincolnshire called South Holland, containing perhaps 100,000 acres of land, great part of which has never yielded any thing, is now about to be drained into the channel formed by this improved outfall, under the powers of an act of parliament passed this very last session. With these facts staring us in the face, with this example of improvement before our eyes, we are now gravely told by the Lynn merchants, that the very same thing proposed to be done at the outfall of the Ouze waters at Lynn, is a wild and chimerical project, which will infallibly ruin the port of Lynn and the drainage, forsooth, into the bargain, of that country which is dependant on the Ouze outfall.

At this enlightened period will assertions be believed, which in the case of Wisbech have proved themselves to be fallacious? Or, can it be for a moment supposed the true reason of the opposition is as they have chosen to state it? I will not offend the good sense of the reader by supposing it possible. Does any man doubt the facts as here stated. Inquiries are easily made, and a view of the two countries in the winter season will shew the wonderful contrast in point of security, and speak to the understanding with arguments so forcible as not to be resisted. Conceive, on one hand, a tract of rich country, rendered productive and secure, as has been before stated; on the other hand conceive a flat extent of considerably more than 300,000 acres, (I speak now of the whole of the two levels, called the south and middle levels, and of marsh land fen, and of other lands contiguous to the Ouze), with water lying against it, whose surface is five or six feet higher than the surface of the land, and which is kept from overflowing by nothing but high banks, constructed of a loose porous soil of a fen country. Conceive a very large part of this always under water in the winter season, and many other districts occasionally overflowed; can it then be wondered at that inhabitants are scarce? What is it that can possibly reconcile any one to such a state of uncertainty? It is the natural fertility of the land, which in one good year will recompense the farmer for the care and hazards of many, though perhaps not for his losses; and surely a country like this is worth preserving, and presents itself to an enlightened public as the fittest object for national consideration, larger in extent than several whole counties of Great Britain, productive of wheat and oats to a degree, of which none but a fen man can have any conception: healthy for cattle of every species when properly drained; standing in need of no manure whatever, but what may be produced from the soil; with advantages peculiar to itself as to facility of cultivation; and possessing internal rivers which communicate with the navigations of the Nene, the Ouze, the Grant, and various others, by means whereof its produce may be conveyed to any part of the kingdom. Is the preservation of timber an object worth attending to? Here is a country struggling for a feeble existence, supported in a state of constant hazard by nothing but mechanical inventions, which require an immense consumption of the best timber the island produces; instead of which hundreds, nay thousands of acres might be applied to the growth of various species; shall a country like this remain a sacrifice for ever to mistaken prejudice. Forbid it public spirit! vain must be all attempts at profitable agriculture where the soil itself is liable, nay almost certain to be lost.

Calculation of improvement to result from a perfect drainage. Suppose two-thirds of 300,000 acres to let at 10*s.* an acre on an average, we will not enquire at what expense the rent has been obtained, (since that is out of the question) but it is frittered away by taxes of one sort or the other, by expenses for repairing engines, drains, and banks; and by allowances to tenants in bad seasons, until the actual produce is not above six or seven shillings at the utmost. The remaining one third, it is well known, lets only at 1*s.* 6*d.* per acre, the account will then stand as follows;

Two-third parts of 300,000 acres, or 200,000 acres, at 7*s.* per acre	£ 70,000
One-third part of 300,000 or 100,000 acres, at 1*s.* 6*d.* per acre	7,500
Supposed rent of the whole	77,500
At a moderate computation, the whole when properly drained would produce an actual rent of 15*s.** per acre	225,000
Annual advantage to be gained by the proprietors	147,500

The public at large, however, from the additional quantity of the articles produced, as corn, wool, &c. or by their increased value when manufactured, must gain at least four times as much, or about half a million yearly. For further observations on this great subject, one of the most important connected with the agriculture of many extensive districts in the kingdom, the reader is referred to the following remarks, in which the objections likely to be adduced against this great source of improvement (a proper outfall at the port of Lynn), are, I trust, fully refuted.

The questions to be considered by the parties interested in that important measure are as follow: 1st, Whether an improved outfall is not a grand desideratum, without which subordinate works have already proved themselves to be of no avail whatever? 2d, Whether that improved outfall is not likely to be had by the means proposed? 3d, Whether the expense of that improved outfall, and of such subordinate works as will be required to convey the waters into it, from the various districts comprising the 300,000 acres, is likely to be such as will justify the undertaking?

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* There are instances, even in Huntingdonshire, where fen land is let as high as 2*l.* per acre, with privileges of ploughing, which are not suited to that good order one would wish to see generally established.

The first question is answered by the deplorable state of the fens; the second by that example which has taken place below Wisbech. The third requires an answer more at large, which I will endeavour to give. The tax meant to be charged upon the lands for the expense of the mere outfall, was *4d.* per acre for ten years and no longer, upon all the lands draining through the river Ouze. Respecting subordinate work, I must explain that the country draining into the Wisbech outfall, is divided into five districts; each of which was already in possession of internal works for conveying its own particular downfall waters, into the main cuts; but neither the internal drains nor the main cuts, were before this improved outfall of any avail towards drainage.

Over and above the tax which was laid for the payment of the expense attendant on the outfall (which, by the bye, was greater than that proposed at Lynn, the tract of country being much less), each of these districts charged itself with such taxes as were required to pay the expenses of improving those internal works, according as the circumstance of its own case made it necessary. Now an improvement having been effected, the expense has of course been well ascertained; and from the knowledge I have of the matter, I can venture to assert that the whole expense, including the outfall, has not been so much as must necessarily have been expended on the internal works, and other subordinate works alone, unless the country had been wholly abandoned, and consequently that all expenses being set off by savings to an equal amount, the proprietors have been gainers of the whole difference between what they make of their estates now, and what was before made of them; which last I have before stated, was in many instances very little in proportion to the inherent value of the land, in some nothing, and in others worse than nothing. The cases are exactly similar, and the plan of draining the lands must be the same in all its component parts. How any man can venture to assert, that an equal and very moderate tax, meant to be laid for the works of the outfall, which the owners of every district may avail themselves of, if they think proper, is glaringly unequal, oppressive, and unjust; and at the same time hold out this as conciliatory language, is to me extraordinary; indeed, this is the very language of a publication, in a provincial newspaper, coming this very day, the 10th of August, 1793, expressly from the Lynn merchants, through the medium of the solicitor employed by them to oppose the scheme, and has been the very language used by them from the beginning.

They have indeed amused themselves and the promoters of the scheme, with what they are pleased to call conciliatory overtures; but, independent of absolute impracticability, the latter have too good reasons to be guarded against what comes from people who in the first instance approve and recommend the scheme, then deny the principle of a plain proposition, which the test of experience, to say nothing of the opinion of almost all the engineers in the kingdom, has proved to be the foundation of every thing which is wanted for the recovery of a lost country; and lastly, who have done and are now doing all in their power to prevent the fairness of it from being tried on its own merits, before the tribunal of a candid and enlightened legislature. Common sense will tell any man

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man that no drainage can be had without a good outfall at sea; but not a syllable of this, or any allusion to it can be found in what they have brought forward, and till that as a previous point is settled and acceded to on all hands, it cannot be expected that a set of people, appointed at a very large public meeting, for the express purpose of carrying a well digested plan into effect, will resign their powers into the hands of those who have thwarted the purpose of their appointment on all occasions, and more especially as they have been publicly invited without effect to come forward and debate the principle of what they object to, for hitherto no precise argument has appeared on their parts; though it must be confessed, it is a deficiency which has been well supplied by invective and general assertions, without any sort of proof to support them.

Advantage to the community from an improved drainage.—To ascertain this, it appears to me, that the short question to be asked, is—what additional produce of consumable articles of every kind, will result from a new acquisition of territory, the increased rent of which cannot be less than 147,500l. and the total additional value of the produce probably four times as much? To attempt to answer this seems unnecessary; for, whether the annual value of the improvement be, or be not over rated, or whether the consumable articles amount to this or that particular sum, we know that an immense improvement must arise, and of course that it must be sufficiently consequential to render it a matter of great national importance.

Navigation.—There is another head on which I must beg leave to be a little explanatory, and that is, the navigation through the intended cut; concerning which the same changes have been rung upon the words partial, oppressive, and unjust. This was also meant to be taxed at the rate of 4*d.* per ton for ten years, and no longer, on all goods conveyed through the intended cut, with a proviso that a certain tax already in existence should cease; and this would reduce it to 3½d. or thereabouts. The simple matter for the consumer to consider is, whether this impost is more than proportioned to the advantage that will be derived, or, more properly speaking, whether it will enhance or decrease the price of freight. I must here state that the intended cut was proposed to be in a strait direction, or nearly so, leaving the Ouze a little below German's Bridge, and entering it again at a certain point a little above Lynn, thereby cutting off near four miles of its present wide crooked course, which is at all times dangerous and often impracticable for lighters to navigate. It will appear in evidence before both houses of parliament, that the present expense of navigating this roundabout course is 7½d. and the expense of navigating the new cut will be 2¼d. making a difference of 5¼d. per ton; and over and above this, as lighters are frequently sunk, that the inland merchants who send corn to Lynn, would gladly pay 1*s.* per last, to insure their cargoes against the dangers of this inland navigation. A last is equal to one ton and a half on the average of oats and other heavy grain, which is at the rate of 8*d.* per ton or thereabouts, and this 8*d.* added to the 5¼d. is 1*s.* 1¼d. per ton, which will be saved to the consumer for ever after the expiration of ten years, while 9¼d. will be saved during the continuance of the impost.

Now, though, as has been before observed, no precise argument has hitherto appeared against the making of this outfall, it is supposed that such objections as the following may be held out against it.

First, by the Lynn merchants, that the effect of the scheme will be uncertain, and may endanger the harbour and trade of Lynn, for want of the large indraught of the tides in the bay between Eau brink and Lynn; which they allege now serve as a reservoir; and that the sand banks in the harbour and towards sea will not be diminished, but removed to a more dangerous situation, and increase the difficulty of the navigation between Lynn and the Crutch. *Answer.* The sea is always deep in proportion to the height of the adjoining coast; and where it is shallow, very considerable harbours have been lost. Witness Fleet harbour, once famous in history, and* Castle Rising on the ruins of which the harbour of Lynn obtained its consequence. Had their loss been occasioned by the execution of any such works as are now recommended, some ground for alarm might result from the fact; but, on the contrary, the sea deserting the shore, an accretion of soil took place; and this being afterwards embanked, *without bringing forwards towards the sea*, the outfalls of the adjacent country, these outfalls in time silted up, and the harbours into which they fell became land likewise; while the drainage of the country communicating with those harbours was entirely lost.

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* Castle Rising is on a hill, the only one in the county, but the proposition is that the sea is always deep when the shore is mountainous, and shallow where the shore is flat; and the town of Casle Rising being upon a hill does not weaken the argument, for mountainous countries abound with springs, whose waters (in addition to the downfall waters) falling from a great height into the streams which communicate with the sea, greatly assist the reflux of the tides in grinding a deep bottom; witness Cadwater at the mouth of the Tamar, and various other bays on the Devonshire and Cornish coast; and witness also Milford Haven, and various other bays on the Welch coast. I refer particularly to these two places because they are mentioned in a report lately published at the instance of the town of Lynn, as cases to be compared with the case of Lynn, when the fact is, that no two things in the universe can be more directly opposite in principle, whether we compare the comparative foulness of the bays, or quantity, velocity, and strength of the living streams falling into them.

and

That the same causes existing at Lynn and Wisbech, would in the nature of things produce the same effect as at Fleet and Castle Rising has long since been predicted, and not only predicted but verified at Wisbech; and is so near being verified at Lynn, that both navigations are at this moment admitted to be in the direct road to ruin. The disease, which was the same, has been cured at Wisbech, by a work exactly similar, *in principle*, to what is now proposed at Lynn, which is a full answer to the uncertainty of the scheme. Their similarity is here demonstrated, and those who deny it may as well say that one man is not of the same species with another, because their features and outward form are not exactly alike.

Wisbech River.	Lynn River.
Its confinement to a narrow space was no farther than to a certain point called the River's end, where it emptied itself into a wide bason of shifting sands.	It is now confined to a narrow space, no farther than to a place called Eau Brink, where it empties itself into a wide bason of shifting sands.
The current was divided below the river's end, into a great number of inefficient streams.	The current is now divided below Eau Brink into a great number of inefficient streams.
The waters over-rode all the tunnels communicating with the river.	The waters now over-ride all the tunnels communicating with the river.
The drainage of the fens through those tunnels was destroyed by the height of the surface of the river-water, occasioned by the growing up of the bed of the river.	The drainage of the fens is now destroyed by the height of the surface of the river water, occasioned by the growing up of the bed of the river.

Wisbech.

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Wisbech.	Lynn.
The cause of ALL the above.	The cause of ALL the above.
The end of the river at the point called the River end, where it was confined to a narrow space, was too far from deep water, and the river ought to have been confined to a narrow space lower down towards the deep water.	The River end, where it is confined to a narrow space as far as Eau Brink is too far from deep water, and the river ought to be confined to a narrow space lower down towards the deep water.
The Remedy.	The Remedy.
The river has been confined within banks to a narrow space, from a point called the River's end, to a place below the sluice, called Gunthorpe sluice, being a distance of about one mile and a quarter nearer to deep water.	The river is proposed to be confined to a narrow space from Eau Brink to a little above Lynn harbour; being a distance of about 2½ miles, to which must be added the difference between the length of the new cut, and the length of that part of the river which is to be deserted, making in the whole near six miles nearer to deep water.
The Effect,	The Effect.
Has been an improved channel below the mouth of the new cut.	As Lynn harbour applies to this, so may it be reasonably inferred that the harbour must be improved.

WISBECH. The Effect.	LYNN. The Effect.
No sand banks have been raised across the bay below the new cut.	No sand banks will be raised across the bay below the new cut.
An improved navigation through the new cut, and up to the town of Wisbech.	An improved navigation through the new cut, and up to Eau Brink will take place.
The foundation for a perfect drainage of the fens which has since taken place.	There will be a foundation for a perfect drainage, an advantage of which all the lands whose outfalls communicate with the Ouze will partake.
An increased trade, the tonnage being increased four fold.	An increased trade will arise by a return of that part which has been in a great measure lost, i.e. from Lynn to Peterborough and Northampton.

The whole resolves itself into this, is it possible in the nature of things that the Wisbech cut, which extends only one mile and a quarter nearer to deep water, can have been more efficacious in scowering the sands below, and in bringing about the other improvements above stated than the new cut at Lynn will be, which will extend almost six miles nearer to deep water than the river now does at Eau Brink, above which it is confined to a narrow space; the harbour of Lynn cannot possibly be injured by a decrease in the indraught, for no such decrease will happen, but just the contrary, since the tides will flow up the new cut in a deep channel, the only possible means of acquiring additional force; for, granting the

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the argument of the opposition to be just, and that the force of the indraught depends on the width merely, we have nothing to do but to make the river as wide again as it is; and then the indraught being widened, the reflowing power will be increased, which is absurd to suppose.

Second. Denver Sluice. That this sluice is the sole cause of the decay of the outfall; and if removed, both drainage and navigation would be compleat. *Answer:* One of the most intelligent engineers and honest men that ever lived, the late Mr. Smeaton, who was employed *by the town of Lynn*, to make observations on the river and harbour, was decidedly of opinion, that Denver Sluice was not the cause of the decay of the outfall, which he said was to be looked for from other events. What was really the cause is shewn in the answer to the first part of the first objection, and it is impossible to refute the fact on which the argument of that answer is founded: for the sea has retreated, and immense tracts of salt marsh *have been* embanked on the adjacent shore. Will the objectors say, that the weakening of the upland streams has caused the sea to retire; this can never be the case, for the outfall at Wisbech has been improved, and since that improvement has taken place, the accretion of salt marsh has been more rapid than usual; witness the act of parliament passed in the last session, for the embankment of 5,000 acres on that shore. A still more decisive answer to this objection is, that the outfalls of the Nene and of the Welland, discharging themselves in the same bay, have likewise been lost; and that Denver sluice has certainly no effect upon any of *them*, it being at an immense distance and across a river, with which none of them have any communication.

Third. That by the immediate effect of the new cut, the harbour of Lynn will be rendered unsafe for the ships and vessels lying at their moorings; and that the violence of the current in the new cut will render the navigation through the same highly dangerous. *Answer.* The immediate effect will not be upon the harbour, but upon the sand banks parallel with it; and the inclination of the channel from the west shore towards the harbour will be gradual and not sudden; and therefore no possible injury can arise to the vessels in the harbour. That the violence of the current in the new cut should render navigation through the same dangerous, is easy to assert, but impossible to happen, inasmuch as the bottom of the new cut is to be carried on an inclined plane of no more than four inches in a mile, which is agreed by all engineers to be such a declivity as cannot affect so violent a current as to injure navigation, but the contrary. Besides the present danger to navigation is not in the narrow part of the river above German's, but in the wide part of it below.

Fourth. By the land owners lying on each side the proposed cut, that the soil through which the cut is proposed to be made, is of a loose nature; and that banks made of such soil will not be sufficient to withstand the force of the tides, and the country may be in danger of a breach of banks. *Answer.* It will be proved in evidence, that the soil is strong and good, and that the banks will be more than sufficient to protect the adjoining country, as they will be of far greater dimensions than the present sea banks, and made of the same materials.

Fifth. Objections from part of the south level and villages bordering upon the fens, that their lands lying at the greatest distance from the outfall, will not receive equal benefit with the lands near thereto, and therefore ought not to be equally taxed: That the lands in the south level are not of equal value when drained with those in other parts of the district, and ought to be taxed according to their value, as was done by the Bedford level, in eleven different sorts or gradations, under the act of 15 Car. II. *Answer.* The fact is not true, which supposes the lands in the south level to be at the greatest distance from the outfall, for those at the extremities of the middle level are more remote than the others. All lands in the great level of the fens must receive an equal benefit from lowering the head of water in the Ouze, which at present forms a complete dam against all the tunnels communicating therewith. The waters from the hundred foot river over-ride the waters above Denver Sluice, insomuch that if that sluice was removed, the safety of the whole of the south level would be endangered. Take away the obstacles below, and the waters will be lowered against Denver sluice, in the same manner that it will be against old Bedford sluice, and the Tongsdrain sluice. The value of the respective lands is out of the question; for it is the value of the improvement which each will receive which is to be taken into the account, and it may happen that the lowest priced land may be most improved.

The opposition have hitherto treated this business as a matter immediately calculated for internal drainage, whereas it is only laying the foundation for drainage at the outfall, which can no longer be had without an improvement in the outfall, though the consequence will be a saving in the expense of internal drainage, because the head of water being lowered against the banks, the sock through them will be decreased, the banks will not be required to be supported to so great a height as they now are, and the size and consequent expense of engines will be lessened in the same proportion as the banks and the rocks through them are decreased.

It will be given in evidence, that the saving in internal drainage will be 1*s.* per acre for ever on all lands drained by engines; and this saving will, like the saving in tonnage, be obtained for an impost of 4*d*. for ten years; but the grand improvement will be the obtaining the means of drainage, whereby the rents of the land will be increased as before stated.

Objection by the growers of corn, consumers of merchandize or inland merchants.—That the tonnage will injure the landed property, and operate as a tax of 4*d*. a last on every last of corn sent to Lynn by the proposed cut. That the tonnage of 4*d*. will be so much additional expense to the consumer on every chaldron of coals, &c. brought from Lynn through the said cut. *Answer*. The direct contrary has been already proved to be the case; but the fact is, that the Lynn merchants who are a powerful and wealthy body, have so intimate a connection with the inland merchants and the barge owners, that many of both have joined in the cry, although the latter know to a certainty that the inland freight must be lessened very considerably; and the former may if they think proper, convince themselves that the saving will be what has before been stated. There is also every reason to believe that the navigation from Lynn to sea will be put, by means of this improved outfall, into such a state, as to admit of vessels differently constructed from those which are now used; and that of course the trade at Lynn will become open to all the world, instead of being enjoyed as it now is, by a very few indeed. For these reasons, if for no other, the plan that they object to ought to be carried into execution, for it is by no means proper that the consumers in an extensive district should continue at the mercy of two sets of traders, however respectable they may be, but who in fact ought to be considered in no other light than as the medium through which consumable goods pass to the public; and indeed who might themselves be greatly benefited by this measure, in consequence of the great increase of trade that would arise if they chose to avail themselves of the opportunity with which they would thus be furnished, instead of being satisfied with a less extended commerce, of which they enjoy a sort of monopoly.

Objection as a work belonging to the Bedford Level Corporation.—That the work proposed by the bill ought to be done at the expense of the Bedford Level Corporation, out of the 95,000 acres given to them by 15 Charles II. and not at the expense of the free lands within the levels, or at the expense of the navigators; the adventurers having contracted to drain, maintain, and preserve the drainage of the great level, in consideration of the 95,000 acres originally assigned them, and that the owners of free lands have a right to exhaust the value of those adventurers' lands by taxation, before the adventurers can with any justice call on them for any further assistance.

Answer. The work proposed can never be considered as a work within the object or scope of the jurisdiction of the Bedford Level, for the following reasons: The proprietors of estates through which the cut is to be made, having petitioned against its being done, would obtain an injunction from the court of Chancery, to stop the proceedings of the corporation, in case they were to set about it without the authority of parliament. The Lynn outfall serves not only the lands within the great level of the fens, but upwards of 100,000 acres of land bordering upon the Ouze, over which the Bedford Level Corporation have no jurisdiction, and the proprietors of which are anxious for a better drainage; therefore it would be highly unreasonable to expect the Bedford Level to do a work which concerns those who are not interested in the Bedford Level. With equal propriety might they be called upon to fallow the sea by a cut and embankment below Lynn, should it hereafter retreat to any distance below Lynn. It is said by 15 Charles II. sect. 5, the Bedford Level are empowered to make works for conveying off the waters of the great level, as well without as within their levels; but can this clause be construed to extend to the cutting a new river many miles below their boundary, and which is to serve a country unconnected with the great level, over which they have no power or controul? It has been said that the 95,000 acres are liable to every work of drainage, and that neither the free lands nor the navigation ought to bear an impost while any part of those 95,000 acres are capable of taxation. It is a well known fact, that by the decay of the outfall at Lynn, the current in the Ouze, and in the various rivers connected with it has been so much checked, that the beds of the rivers have greatly silted up, and the water therein being raised against the banks, the expenses of supporting them have so much increased, that many thousand acres of adventurers' land, part of the 95,000 acres have been given up to the corporation, as incapable of supporting the load of taxes, necessarily imposed for the support of the works of drainage, and which have been laid as high as the lands could possibly bear; this, added to a large debt, borrowed on the security of the taxes applied for the benefit of the levels, puts it out of the power of the Bedford Level Corporation to support them, much more to extend them to any new and great works like the present. The maintenance of the works of the corporation, were long since found by experience to exceed the fund for their support. The banks alone were originally two hundred miles in length, besides above fifty other great works; and the corporation were under the necessity of abandoning them all, except the great river banks, and all the inward works fell to decay. The owners of free lands and the country at large were truly sensible of the inability of the corporation to do those works, and under that conviction have at different periods, supported the internal works under numerous acts of parliament obtained for putting parts of the said levels into districts . and at this day all the internal works are supported by the land owners under those various district acts, and money is indiscriminately raised on all lands, within the districts, as well adventurers' as free lands, so that the corporation were reduced to the necessity of abandoning the idea of internal drainage, which has been since committed by law to the proprietors of lands, who with the assistance of the corporation are now endeavouring to obtain what is known by each description of parties interested, to be the only thing that can be done for the improvement of the outfall. Besides, the opposition hold out an idea of bringing forward a plan of their own, without considering that the corporation of the Bedford Level are as much bound to execute that or any other plan, as they are bound to do this which is now objected to.

Objections from part of the country of Marshland. That many parts of Marshland, which for distinction sake are called highlands, are to be taxed by this plan, and will not receive benefit by the new cut, being already sufficiently drained, and therefore ought to be exempt from tax.

Answer. The country of Marshland has ever been under the care of the commissioners of sewers for the county of Norfolk. All the cuts and drains belonging to the level of Marshland were designed and made to carry off the fresh and salt waters, which might at any time chance to annoy or surround the same, and both high and low lands are charged to the drains and common sewers leading to its outlet into the Ouze. When the outfall was good, all the lands which paid to the same were laid dry, and consequently they were then (not only all equally charged) but all equally benefited. But now by the rivers being silted up, the outfall is and has been for several years past so much impaired, that the drainage of the country of Marshland is nearly lost; the highlands are charged to these sewers and gools, and reap the sole benefit of them, while the low lands are equally charged and receive no benefit; for the former when surcharged with sudden downfalls, let go their stops and dams, and pour their waters upon the low lands, where of course all those waters must lodge, which the outfall cannot carry off. It is therefore obvious that the low lands instead of equally profiting with the highlands by the sewers and gools are most grievously oppressed by the highlands themselves.

The country of Marshland is a parcel of ground containing about 40,000 acres, gained at different periods from the sea. It is encompassed towards the fen on the south by two banks, called the Old and New Podike, to prevent inundation from the fen waters; and next the sea and Ouze by banks to defend the country from salt and fresh waters. The high as well as the low lands of the country of Marshland, are assessed as equally as may be to the support of those banks. That the country of Marshland is greatly oppressed by the decay of the outfall, clearly appears from proceedings taken at different periods within the last two years to which the reader is referred.

At a meeting of the commissioners of sewers of the county of Norfolk, and of land owners of the country of Marshland, holden on Wednesday the 12th of January, 1791, at the Duke's Head Inn at King's Lynn in the said county, John Edwards, Esq. in the chair:

Resolved, that the outfall of the river Ouze between Saint Peter's church and the town of Lynn, is defective: That a cut from the bend of the river near Saint Peter's church to Lynn, (which cut was formerly proposed by Mr. Kinderley) would effectuate a proper outfall, and at the same time improve the navigation: That John Edwards, Esq. Sir M. B. Folkes, Bart. William

Bentinck, Henry Bell, Anthony Dickins, George Hagge, Edmund Saffery, T. B. Plastow, Maxey Allen, William Bagge, and John Carey, Esqrs. or any two of them be a committee of this meeting, to request the mayor of Lynn, to call a meeting of the merchants and traders at Lynn to take their sentiments upon the expediency of such a cut; and that they, or any two of them be also a committee of this meeting, to propose the said cut as a drainage to the corporation of Bedford Level, and request them to depute a committee to attend a meeting to be holden to take such plan into consideration. That the meeting do adjourn to Wednesday the 9th of February next, at eleven o'clock in the forenoon, at the Duke's Head at King's Lynn, and that public notice be given of such adjourned meeting.

By order of the meeting,
ROBERT WINCOP.

Norfolk, (to wit.) At a general session of sewers, holden for the said county on the 25th of April, 1792, at King's Lynn before several of his Majesty's commissioners of sewers, the following verdicts of the jurors were returned.

The verdict of the jury sworn to inquire for our sovereign lord the king, and the hundred of Freebridge, in the parts of Marshland in the said county. "We present the river Ouze or outfall between St. German's Bridge and Lynn being silted up, whereby the works of sewers are greatly impeded; and we pray this honourable court would take the same into their serious consideration, and endeavour to obtain such relief and assistance as shall be thought proper." Signed by nineteen jury at King's Lynn, 25th of April, 1792.

The verdict of the jury sworn to inquire for our sovereign lord the king, and the hundred and half of Black

Close, in the said county. "We find and present that the river Ouze, or outfall between St. German's Bridge and Lynn has for many years past been gradually silted up, which prevents all our internal works of sewers from having their desired effect, and we pray this honourable court will take the same into their serious consideration, and endeavour to obtain such relief and assistance as in their wisdom shall be thought expedient." Signed by twenty-one jury at King's Lynn, 25th April, 1792.

The resolution of the Court upon the said presentments. The jurors for the hundreds of Freebridge, Marshland, and Black Close having this day in their respective verdicts presented to this court that the river Ouze, or outfall between St. German's Bridge and Lynn, has for many years past been gradually silting up, whereby the works of sewers are prevented from having their desired effect; and praying this court, would take the same into serious consideration, and endeavour to obtain such relief and assistance as should be thought expedient, this court having duly considered the matter of the said presentments and state of the outfall, resolve, that the most probable mode of obtaining relief for the country will be by making a new river from Eau Brink to Lynn, through the marshes, agreeable to the plan recommended by Messrs. Mylne, Galborne, and Watte, engineers, in their several reports lately published; and this court do recommend to the landing and trading interest, concerning the said river and outfall, an application to parliament for that purpose, in which this court are willing to co-operate with them, as far as is consistent with the trust reposed in them by their commission.

By the Court,
ROBERT WINCOP, Clerk of Sewers.

Thus it appears by the resolutions of the commissioners of sewers, and the land-owners of Marshland, at their meeting of the 12th of January, 1791, among whom many of the most respectable gentlemen of the neighbourhood were present, that the outfall was defective, and that the only plan for improving it was that of making the proposed act. It also appears by the presentment of two juries (consisting of forty persons on oath, and the adjudication of the court thereon), that the disease exists, and that the radical cure is that proposed by the intended new cut.

From what has been stated, it is presumed there cannot be any doubt, but that the evil exists, and that Marshland is in the state described; and taking into consideration the immense saving to the country of Marshland, by annihilating the banks on each side of the present circuitous channel between Eau Brink and Lynn, which will be rendered useless by the desertion of that channel; the additional security of the country of Marshland, by the banks to be made against the new cut, and the oppression of the low lands by the high land waters settling thereon, when both equally contribute to the present banks, drains, and gools; it follows that sufficient reasons occur why all the lands of Marshland, usually rated to works of sewers, as stated in the intended bill, should on the present occasion be equally taxed. Indeed it is almost an insult to the understanding to suppose that any real objection can be made to a tax so moderate as 4*d.* an acre for ten years, which is equal to about a perpetual tax of 1½*d.* and which cost an infinite deal of money to apportion it according to the different qualities and levels of the various districts communicating with the Ouze. The short answer to all that can be asserted respecting the tax, let whatever harsh epithets be used, is, that no one district can be drained, effectually, at present;

and that the tax proposed is but as a feather when compared to the annual sums now wasted in wild projects. The reader is by this time well acquainted with the fens and with the various interests concerned in their welfare. The nature of the disease has been long understood, as well as the remedy that was wanted to be applied. The wretched state of the outfall has been the subject of attention, at different periods, for more than half a century, during which time the drainage as well as the navigation and harbour of Lynn, have been constantly getting worse. The conduct of the Lynn merchants has been clearly shewn on the present occasion, and the influence which it has had upon many respectable characters, who at the outset agreed to the principle of what they now condemn. That conduct has operated in the very same manner upon every occasion, and has hitherto defeated an improvement, which is certainly of the greatest consequence, and capable of being executed at the least expense of any thing of so important a nature that has perhaps ever yet offered itself to the consideration of the public. It remains only to notice one article of controversy between the promoters and opposers of the scheme. Nothing specific, as has before been noticed, has ever come forward from the latter, but vague objections to what has been proposed, and hints at some project in embryo. This induces me to suppose, that if the gentlemen in opposition have any thing to bring forward, the embankment of all the rivers communicating with the Ouze, and of the upper part of the Ouze itself, is what they have in contemplation. To this I answer, it is working at the wrong end; and is neither more nor less than adhering to that erroneous plan, which has been attended with such very ruinous consequences, varying only the mode of execution.

It is a very extraordinary circumstance, that although in almost every publication relating to this business, there is to be found some passage, which goes pointedly and directly to approve the principle of what is now aiming to be done, viz. "The keeping the water together in one firm compact body, instead of suffering it to divide and disperse itself into a great variety of ineffectual streams, no man, for a long series of years attempted to apply this sure and certain remedy, to that particular part where and where only common reason must tell any one it would have any good operation, namely, the outfall, but to some place at an immense distance from it. Could this be owing to a want of penetration in men, otherwise very ingenious; or did they write under the influence of a certain description of persons, the effect of whose prejudices we have seen in these our modern days? Mr. Kinderley was the first man, who had penetration to discover the true cause of the existing evils, or courage to break that spell of enchantment, by which all others were held; yet when his scheme for improving the drainage below Wisbech was brought forward, Badslade who took upon him to compile a history of the fens, asserted, "*that instead of being of service to the North level, it would render that level in a short time irrelievable at all.*" It would be easy to prove, if necessary, that this man was as false an historian as he has turned out to be a prophet, and yet his compilation is the main pillar on which some comprehensive scheme is to be raised; and we are expected to bury in oblivion all that has been done under our own noses, by means entirely different to any he has recommended. "I take leave of the subject by declaring my firm opinion as follows, viz: Vain will be all embankments, without attention to the outfall; and unnecessary in a great measure, if the outfall is made good in the first instance; for if you lower the water at the outfall, you lower it inevitably in the main river, communicating with that outfall. Now every body acquainted with the country, knows the soil is of such a nature, that by the friction of the water, and the use of spade machines, it may be ground to almost any depth. A bank then is by this operation already formed to your hands by lowering the water below the surface of the whole country, and infinitely stronger than any that can possibly be constructed by art, to resist water that flows above its natural level. The consequence of lowering the water in the main river, is the lowering it also in all subordinate rivers falling into it, and the navigation of these will be preserved as they now are by sluices, and the beds of them ground down to a level with the bottoms of those sluices, resorting in all cases to manual labour where the soil happens to be too strong to yield to the friction of the spade machine. This and this only is the rational way to obtain efficient banks, *and the country will not surely for ever persist in the gigantic scheme of heaping, as it were mountain on mountain, without obtaining any thing like security for that property which is the object at stake; for, be it remembered, that after all that can be done in the raising of banks, our money is wasted; and it is on the outfall, and the outfall only, that we must at last depend for security.*"

Respecting what has since been done in the furtherance of this certainly most desirable purpose, and to which the above most excellent remarks were so well adapted, I have been favoured with the following account from their very ingenious author, to whom the fen country was certainly much indebted, although it will be found by what follows, that the scheme there proposed has not been efficiently carried into execution. "Nothing has been done towards a more complete drainage of the fens except obtaining a very expensive act of parliament, which cannot, as I understand,

derstand, be carried into effect without an additional tax; but not being a commissioner under that act, or any way concerned in its execution, I know very little of the detail of the business." *March* 31, 1807.

Under-draining has been done in some of the parishes in this county, by the mole plough, which is much approved of, on those strong clay soils, taking the precaution to make a great number of head grips or ditches which latter are the best, and should be made deeper than the mole plough has gone. Great care must be taken to keep the ends of the mole plough drains open as they are apt to silt up. Under-drains are made in the usual way, at 3*s*. for twenty-two yards.

SECT. II.—PARING AND BURNING.

THIS process is more generally, and has been longer practised in this county than any other in which I have ever been, and I have seen many proofs in it of its being highly beneficial to land of any kind. I shall here insert some few leading instances as given to me by different farmers. Mr. Peppercorn has known one farm that has had upwards of four hundred acres pared and burnt at different times since the year 1778, which so far from receiving injury has kept progressively improving ever since that time, and consequently increased in value. About forty acres of it were pared and burnt in the year 1778; about thirty more in 1782 or 1783, being ploughed and sown with rapes for seed, and the corn crops after have all proved good; the remainder of the farm was pared and burnt in the years 1794, 5, and 6, and the whole answered to the utmost expectation. The above farm was of a strong sour coarse clay while in pasture, and was what is termed hide-bound, covered with the ground or dwarf thistle, (which spreads like endive) and ant-hills producing a kind of poor benty grass, so very unproductive as to be neither fit for pasture nor meadow; the rent being then about 5*s.* per acre, and it is now 15*s.* or more.

Mr. Peppercorn also instances another piece of land of similar nature, and similarly managed as to paring and burning in the year 1794, which was ploughed up for the express purpose of improving it to lay down for pasture; it had only two crops taken from it; it was then fallowed and one part of it sown with Swedish turnips, and the other with cabbages, and then sown with barley, 16lb. of white clover, five bushels of hay-seeds of a good quality per acre, and it has ever since been of double the value it was originally; and is likely so to continue. There are many hundreds of acres in Huntingdonshire producing *whins* or *thorn weed*, dwarf thistles and ant-hills; and a kind of coarse hassocky grass, which is not proper food, nor indeed food at all for any thing, which would be thus improved, and raise at the same time so large a quantity of sustenance both for man and beast.

Mr. John Ilett, of Somersham, approves of paring and burning fen-land once in six years, taking the following course of crops; after paring and burning, sow rapes; if they prove strong and good eat them off by sheep, and let them stand for seed; then take oats, then barley sown with 14lb. of red clover, some also sowing five bushels of hay-seeds per acre, but others with one or two bushels of ray-grass instead; these seeds are generally eaten off by sheep during the whole time the land lays in that state; though some mow them the first year, and then keep them for pasture for three or four years, after which pare and burn again.

Mr. Ilett is of opinion that two years is long enough to let the fens lay in grass, as when it lays longer it is very apt to get full of grubs; some in that case fallow their land all summer, for the purpose of giving the roots an opportunity to destroy the grubs; some also sow the fen lands, when infested with grubs, very late, finding that the late sown crops are not so much injured by the grub as the early ones, especially if the wind should have remained, any length of time in the north; the sowing late, it is very probable, may be a means of preventing the devastation occasioned by the grub, which, as I have already mentioned, springs from a fly; it may therefore get into the fly-state before the sowing begins, or at least the greater part of them may. As to the observation respecting the north wind, that can only affect them in that they may not work about so freely in such cold weather as they do in hot sunny days.

Samuel Wells, Esq. of Ramsey, gives the same opinion on the management of fen lands.

It appears very plain to me that the prejudice against paring and burning has arisen more from mere *theory* than *practice*, for since I have been employed by the Honourable Board, I have very minutely examined into the subject, and I have not found a solitary instance of any person persevering in the system, but he speaks of it in the highest terms; the conclusion I draw from such information is, that it now and then may have happened for a farmer once in his life to pare and burn a piece of land, and who will endeavour to prove it was injured thereby, which it is also possible might be the case, *under his method of doing it*, and his following course of crops, and *principally*, perhaps, from his not letting the land have its own produce again in *manure.* I have known the practice, of paring and burning from a very early age; my first knowledge of it was on land which was probably as improper for it as any land could be, the soil being clay which burnt to a red ash, something like brick, but notwithstanding all this, the grass was always finer and of a better quality ever after, and this, although the land was far from being treated as it ought to have been, as I do not recollect its ever having the manure produced from the crops grown on it, and carried to it again. I am clearly of opinion, that there are many hundreds of acres in this county of poor stiff coarse clay, covered now with *whins* or *thorn-weed,* thistles, large overgrown ant-hills, and a sort of coarse bad *hassocky* grass, and not keeping more than a ewe and a half an acre, which if pared and burnt and the crops taken from it, which I have directed in the 7th section of Chap. IV. it would not only produce the advantages there laid down, but when it came to be laid down again would keep infinitely better double the number of sheep and cattle, a convincing proof of the *land being improved.*

Mr. Peppercorn's idea of the land being hide-bound is a very proper one; it is of a sour coarse clay; those whins or thorn-weeds are a hard plant which no animal can eat, and have a widely extended root; the thistles and the shire grass growing on the ant-hills are the same, so that there remains but about one-fourth of the land to produce even that bad kind of herbage which it would and does now on that small part produce.

Now it is obvious, that as no animals will eat such noxious plants or whins, that very great quantities of ashes must be made from paring and burning such land; and that, when those ashes and this hide-bound clay come to be intermixed, and smothering crops of an ameliorating nature follow, the soil must become of a much more mellow nature; then, when the straw produced from these crops is made into compost dung and laid on the land, and it comes after about six years cropping, to be laid down in a proper manner with grass seeds for the purpose of pasturage, the herbage will have a very different sort of appearance to what it had before; at all events it will not have the many obstructions it had previous to paring and burning, and all the land, will now produce plants of an useful and very profitable description.

Much of these kind of soils lies very improperly ridge and furrow, which might be altered in the six years process, by lowering the ridges and raising a small land in the furrow, which would be most particularly advantageous by properly draining the land; indeed I cannot see a single obstacle to improving by this means, and there is a certain chance to raise something from what is really at present a mere nothing. It may be proper here to observe, that these clay soils would burn to a red ash, yet from the quantity of refuse stuff which would be to burn with it, it might be burnt in a slow proper manner; and also that the hills should be made very small, and as soon as burnt, should be spread *while red hot;* much damage being done, especially on such soils as burn to red ashes, or a bricklike substance, by letting the hills lay after the outsides are burnt; the inside, though probably too much burnt even then, still keeps burning, whereas this would be totally prevented, were the hills immediately spread, and the land very materially benefited; and should there still remain any reptiles undestroyed, this would be a very probable method of destroying the greater part, if not all of them: the process of spreading ashes being in May, at which time wire-worms, grubs, &c. are coming to perfection. After all this, there is a very great attention necessary in the ploughing process so as to make the best of the ashes, to make the land produce profitable crops, and in the kind of crops proper for various soils, after paring and burning in different situations.

SECT. III.—MANURING LIME.

It may be observed by the reader that where lime has been applied in this county, the produce does not seem to be increased, but I am of opinion that it does not arise from lime not being proper for land, but from the misapplication of it, and from not well knowing the nature of it: lime has been understood by many to be a vegetable matter, when it is on the contrary calcareous; a corrector but no promoter of vegetable substances, consequently it has, from this ignorance of its qualities, and its being misapplied, been very frequently condemned by men, otherwise of real judgment and of long experience; it has by them been frequently applied *instead of dung;* it ought never to be applied but where there is a sufficiency of vegetable matter to produce vegetable plants. When I wrote the first edition of my Experienced Farmer, I was not very well acquainted with the true nature of lime; what gave me the correctest idea of the great difference between vegetable matter and calcareous substances, was the application of gypsum and Nova Scotia plaster in America.

The opinion of farmers in that country of lime, &c. is in all cases as utterly wrong as it has been, and still is in many instances in England, for they chiefly apply it there as a *manure*, expecting it like dung to promote the growth of plants. The soil of America being so very poor, where I sowed turnips in drills with a small quantity of *compost dung* and *gypsum*, &c. it made the difference of a *moderate crop* and *none at all*, or about three to one; but where no *compost* was applied, the *gypsum* by *itself* was of no avail. From this and many other similar instances which have fallen under my observation, I am thoroughly convinced that *lime ought never to be applied* but on land that has *much vegetable matter in it*, either from *very high dunging*, before lime is applied, or from some other cause having naturally a *superabundance of vegetable matter*. On old land newly ploughed up, and *not pared and burnt*, acting as a corrector, it gives more grain and less straw. I do not think that lime can be advantageously applied to any green crop, as most green crops want much vegetable matter, except after turnips are sown in hot sandy land; if it was spread on the surface it would be serviceable, especially if it were done after rain; I found gypsum to be of very great service when thus applied on the hot soils of America. I have also found it to be beneficial on the clover crop in that country, where the soil had any vegetable matter in it to support the plant, but of no effect at all where the land was not in what is called good heart. I have seen some hand-bills and advertisements out in London, offering gypsum for sale as a manure, I wonder that farmers can be induced to buy it as a *manure*, because if they would take a quantity of it without *earth*, it would not suffer any plant to grow, and if mixed with half the quantity of earth, or in equal portions of it and earth, plants would be only then produced (*if at all*) of a very weak kind. Thus we may compare what it *would* do on a *large scale*, from what it *will* do on a *small one*. I do not think that lime is so great a corrector as gypsum; I also know that the *sole* use of the latter arises from its quickly cementing, and thus preventing (where moisture has been previously given as well as manure) the heat of the sun from exhaling the moisture or nutritious quality of the manure; the plant is consequently kept moist at the root, it therefore grows well, and quickly gets a shade from its own leaves.

SECT. IV.—YARD-DUNG.

By the general account of right manures, it may be seen that this is the usual application in this county, except sheep-folding, and it is made use of in a long state, being either immediately carted on the land or laid out into hills, or turned over in the fold-yards; this last is the most general practice, and is the worst of all, as from being thrown, a fermentation is caused, and also a very long exhalation, both by the moisture it naturally retains, and continual rains falling upon it; from which not only greatest part of the nutritious qualities of the dung, but all the salts are evaporated from it, the latter running off in copious quantities of black water; and the fermentation is not strong enough to kill the seeds of the weeds, which may be seen from weeds growing on the tops of dunghills which lay long enough to give the seeds time to vegetate. I know from experience, that was the dung applied in its raw state about one month after it is made, and mixed up with earth, it would produce three loads of good and efficient manure, where one load is now produced; and the manure so made when applied to the land would cause in-

finitely

finitely better crops, than the manure made in the present method. It is worthy the farmer's strictest attention to preserve by every means in his power the salts of dung, for on them depends his well doing in all agriculture, and I have no doubt but in the present slovenly method of making manure, or rather I should have said management of it, that one load of straw dung has (if it were weighed) more salts in it than three loads, after it has undergone all the evaporations which he so unnecessarily exposes it to; it therefore behoves every one concerned in agricultural pursuits to give this subject the most serious consideration.

There are other advantages accruing to the making of compost, especially in the mixture of horse, cow and pig dung, the manure being much more efficient when thus put together than though used separately, horse dung being of a hot light nature, cow dung of a very coherent kind, and pig dung being of a very saponaceous nature and very rich, (the latter is much preferred in Huntingdonshire as a manure); thus when all well combined together the very best of manures is produced; the next advantage is that what by leading the manure, making the compost-hill, turning it over, and spreading it on the land, there can scarcely be any one part of the land on which it is thus spread but what must reap the benefit of their combined qualities. Another very material advantage of compost is, the opportunity of adding whatever kind of earth may be thought proper for the land, on which it is about to be laid, or even for particular parts of a field, such, for instance, as clay to sand or loose gravel, and sand or gravel to clay soils, but for the clays of this county gravel would be found most beneficial. From the very great care which is taken of stubbles in this county, immense quantities of the most beneficial manures would be made; and although the expense of compost-making may seem great to those who have never been used to making it, yet as it certainly is to be made for about *1s.* *6d.* per load, I hope that will not be made an objection to so great an improvement, but that it will be universally adopted to the total subversion of the ruinous practice of *sheep-folding.* I know of no manure at once so cheap and so good; when properly made it is reduced to fine *garden earth*, which certainly is the most proper food for all plants, besides *it is prepared* and got into this state *previous* to its application; while it stands to reason that *long strawy dung* being applied, it must have *time* to get *reduced and incorporated with the soil before it can become food for plants*, thus here is a self-evident advantage. When dung is laid on land in a long state, though it may have had much salt in it at the time, yet there is certainly great opportunity for the sun and wind to dry and exhale from it its most fertilizing particles.

In the ploughing and harrowing process long dung is liable to be drawn in lumps, so that some parts of a field get no manure, and others too much, while compost dung is not liable to this very great objection; as it is readily dispersed, every plant receives from it an equal benefit; there is therefore a much greater probability of an even crop of corn yielding much more grain, and probably not so much straw. In the turnip crop long dung is in every respect objectionable; in the first place it is a certain encourager of the fly, in harrowing in the seed it sticks in the harrows, and thereby the turnip seed is drawn into patches, consequently the crop must be so; if the crop be harrowed after [illegible] up, the long straws are the occasion of many plants being pulled up; and lastly, in hoeing, it prevents, by hanging and clogging up the hoe, that operation from being done as it ought. It is a very easy matter for a farm to find itself in dung by proper attention to the making of compost, as may be seen from my calculations under the head of Expenses and Profits, and by such means it will *enrich* itself, and from long observation and experience I am convinced that in any other way it will but barely keep itself in the same state. Farmers who have been long in the habit of purchasing dung, though living in the vicinity of large towns, where it was to be bought cheap, have not found it to be profitable, though they have had ready and profitable sales for their hay and straw, and in return have carried home manure; instances are very rare indeed where such farms have been more improved than those in remote situations. The reason for this arises no doubt in great measure from its being very difficult to estimate the *expenses* of such management, such as tolls, wear and tear of carriages, harnesses, and loss of the horse's dung going to and fro; and where at great distances from the towns, and the men live at much greater expenses than at home, and may be supposed to be about half their time from it; and on hay farms by going two or three times a week to market, both horses and men are nearly fully employed; besides as there is frequently a great deal of night-work for them, neither men nor horses are at all fit for work on the following day. These things all considered, it may be easily seen how great part of the profits in such situations are expended, and looking in a general way at those farmers and others living at more remote distances, it will be found that the latter, consuming those parts of their produce on their farms, and paying due attention to their manures, have generally speaking become the richest. Even the gardeners, or as they may be termed the gardening farmers nigh London, though they really are very industrious and go through much toil, do not live in half the comfort that farmers do in very remote situations of Lincolnshire, where it is very rare that any hay or straw is sold from the farms. I have conversed with many of these gardening farmers, and viewed their farms, which certainly are well managed; but I can see that what they tell me is very true, (i. e. that they are not profitable), the *heaviness* of their expenses being so terrible a drawback on their profits.

I have been induced to make these latter remarks to shew farmers in this county who live in remote situations, that their situations are often preferable to those near towns, (which frequently pay very heavy rents, and their produce is sold low;) where they will pay a due attention to their produce, and the due application of it to their land, by returning the straw to the land, in good compost manure. Before I leave this subject I must say a word or two respecting the effects of the black water which is seen to run from manure hills, and caution every one to prevent its escape as much as possible, which is alone to be effected by making the dung into compost, where it is absorbed, and thus becomes the very essence of manure; whereas if once it escapes it can never be applied to *equal advantage*, either by watering land with it or in any other way. When I lived at Doncaster, I applied this black water, of a seemingly much richer quality than it even commonly is, to one land of meadow as an experiment, thinking that I must have a very superabundant crop of hay, and at the same time very much improve my land for future crops, but I was far from finding this to be the case. Having some lucern growing in *drills*, I then turned my thoughts to that, and watered one drill of it very sufficiently, and another not so much; I could not perceive that I had benefited it by these applications, indeed, on the contrary, part of my crop was even injured by it. Being much puzzled by these experiments, and being intimate with the late Mr Drummond of Bawtry, a very intelligent and able agriculturist; I informed him of the failure of my experiments, and found that he had been doing the same thing with the like result. I therefore consider it as *blood*, which while *in the body* is the *spring of life*, but when once taken thence, it can never be *returned into the body*, to be of the *least service*, but on the very contrary it must *injure* what it before was the *sole cause of sustaining*.

CHAP. XIII.

EMBANKMENTS.

THESE, as may be seen in Mr. Maxwell's account of the drainage of the fens in a preceding Chapter, are very extensive, and being composed of a loose porous soil, *puddling* is very much approved of and practiced, and the expense of so doing is 3*s.* per pole.

CHAP. XIV.

LIVE-STOCK.

SECT. I.—CATTLE AND HORSES.

Parishes.	CATTLE. Breeds.	Cows.	Stores.	Fattening Cattle.	Calves Reared.	Calves Suckled.	HORSES. Breeds.	No.	Foals.
Abbotesley	mixed	50	—	—	—	—	Cart kind	50	—
Alconbury, &c.	ditto	60	—	—	54	—	ditto	110	22
Alwalton	ditto	40	—	—	—	—	ditto	40	1
Barham	ditto	12	—	12	12	—	ditto	15	—
Bluntisham	ditto	200	100	—	—	—	ditto	60	14
Brampton	ditto	200	—	—	20	—	ditto	40	5
Brington	ditto	16	—	—	8	—	ditto	10	4
Broughton	ditto	36	—	—	—	—	ditto	40	10
Buckden	ditto	60	—	—	42	—	ditto	84	20
Buckworth	ditto	70	230	—	40	—	ditto	30	6
Bury	ditto	40	—	—	—	—	ditto	30	8
Bythorne	ditto	35	—	40	10	—	ditto	45	6
Catworth	ditto	40	—	12	12	—	ditto	50	12
Caldecot	ditto	20	—	—	40	—	ditto	26	6
Chesterton	ditto	100	—	—	24	—	ditto	26	1
Coln	ditto	70	—	—	100	—	ditto	60	10
Conington	ditto	60	—	200	20	—	ditto	30	3
Covington	ditto	15	—	—	12	—	ditto	30	6

Parishes.	CATTLE. Breeds.	Cows.	Stores.	Fattening Cattle.	Calves Reared.	Calves Suckled.	HORSES. Breeds.	No.	Foals.
Denton	ditto	10	—	—	12	—	ditto	16	2
Doddington	few short horned, rest mixed.	40	—	—	6	—	ditto	26	5
Easton	mixed	40	—	—	6	—	ditto	21	4
Elton	long horned	70	—	—	50	—	ditto	80	15
Ellington	mixed	40	—	40	20	—	ditto	40	—
Everton	ditto	10	—	—	—	—	ditto	20	—
Eynsbury	ditto	60	—	—	8	—	ditto	50	10
Farcet	ditto	70	—	—	60	—	ditto	54	20
Fenny Stanton	ditto	50	—	—	10	—	ditto	50	20
Fletton	ditto	20	—	80	12	—	ditto	20	—
Folkesworth	ditto	22	—	10	15	—	ditto	29	4
Gidding Magna	ditto	50	—	—	—	40	ditto	80	10
Gidding Parva	ditto	20	—	—	6	—	ditto	12	—
Glatton	ditto	30	—	—	20	—	ditto	60	9
Godmanchester	ditto	100	—	—	20	—	ditto	100	—
Graveley	ditto	10	—	—	10	—	ditto	25	—
Graffham	ditto	30	—	—	20	—	ditto	30	—
Gransdon	ditto	80	—	—	10	—	ditto	50	—
Haddon	ditto	17	—	20	19	—	ditto	24	2
Hamerton	ditto	40	—	—	12	—	ditto	40	6
Hartford	ditto	40	—	—	40	—	ditto	40	7
Hemingford Grey	ditto	50	—	—	20	—	ditto	50	6
Hemingford Abbots	ditto	50	—	—	—	—	ditto	55	—

Parishes.	CATTLE Breeds.	Cows.	Stores.	Fattening Cattle.	Calves Reared.	Calves suckled.	HORSES. Breeds.	Horses or mares	Foals.
Hilton	mixed	55	—	—	6	—	Cart kind	44	—
Holme	ditto	50	—	—	50	—	ditto	40	—
Houghton	dtto	50	—	—	40	—	ditto	40	—
Huntingdon	dtto	50	—	—	—	50	ditto	20	—
Keystone	mixed	50	—	200	20	—	ditto	40	6
Kimbolton	Duke of Manchester breeds the Hereford, Mr. Welstead feeds the North Wales on weak lands, and the Hereford on strong lands, the rest of parish mixed.	50	—	250	20	—	Duke of Manchester uses the Suffolk, the rest of the parish the common cart horse, colour black, and are very good ones.	70	—
Leighton Bromswold	mixed	30	—	—	20	—	ditto	50	12
Long Stow	ditto	30	—	—	10	—	ditto	36	6
Luddington	ditto	50	—	—	12	—	ditto	23	4
Lutton	ditto	30	—	—	25	—	ditto	30	4
Molesworth	mixed	30	—	14	16	—	ditto	43	7
Morborn	Irish, Scotch, and Yorkshire.	20	—	—	20	—	ditto	28	6
Needingworth cum Holywell	mixed	150	—	—	70	—	ditto	170	—
Offord Cluny	long horned	30	—	30	12	—	ditto	28	4
Offord D'Arcy	mixed	26	—	—	12	—	ditto	30	6
Old Hurst	ditto	30	—	—	20	—	ditto	35	4

Parishes.	CATTLE. Breeds.	Cows.	Stores.	Fattening calves	Calves reared.	Calves suckled.	HORSES. Breeds.	Horses or mares	Foals.
Old Weston . .	mixed	40	——	——	20	——	Cartkind	60	6
Overton Longville	ditto	30	——	100	12	——	ditto	32	6
Overton Waterville	ditto	60	——	——	20	——	ditto	40	4
Papworth .	ditto	30	——	——	20	——	ditto	21	6
Paxton Magna .	ditto	40	——	——	——	40	ditto	63	——
Paxton Parva .	ditto	30	——	——	4	——	ditto	30	4
Perry .	mixed	15	——	——	6	——	ditto	18	2
Pidley .	Yorkshire	45	——	——	——	——	ditto	40	——
Ramsey . .	ditto	200	——	——	200	——	ditto	200	80
Raveley Magna .	ditto	50	——	——	50	——	ditto	50	10
Raveley Parva	ditto	10	——	——	10	——	ditto	16	3
Ripton Abbots .	ditto	100	——	——	100	——	ditto	90	20
Ripton Regis	ditto	20	——	——	16	——	ditto	16	4
Sawtry St. Andrew	ditto	100	——	——	50	——	ditto	90	20
Sawtry St. Judith	ditto	60	——	——	60	——	ditto	50	20
St. Neot's	Short horns and Leicester	50	——	20	15	——	ditto	65	——
St. Ive's .	Norfolk, Suffolk, Leicester and Cambridge	60	——	——	——	——	ditto	50	10
Somersham . .	Short horns	87	119	——	40	——	ditto	148	29
Southoe .	mixed	20	——	——	5	——	ditto	32	6
Spaldwick .	ditto	20	——	100	6	——	ditto	25	3

Parishes.	CATTLE. Breeds.	Cows.	Stores.	Fattening calves.	Calves reared.	Calves suckled.	HORSES. Breeds	Horses or mares	Foals.
Standground	mixed	25	——	——	10	——	Cart kind	50	6
Stebbington	ditto	20	——	——	16	——	ditto	50	6
Steeple Gidding	ditto	9	——	40	14	——	ditto	24	——
Stewkley Magna	ditto	70	——	——	40	——	ditto	100	5
Stewkley Parva	ditto except some good short horned cows, and a Hereford bull	40	——	——	30	——	ditto	35	——
Stilton	ditto	40	60	——	30	——	ditto	48	10
Stoughton	ditto	40	——	——	8	——	ditto	40	6
Swineshead	ditto	40	——	——	20	——	ditto	30	6
Thurning	ditto	40	——	——	8	——	ditto	30	1
Toseland	ditto	38	——	——	7	——	ditto	29	2
Upton	ditto	30	——	——	20	——	ditto	30	——
Upwood	ditto	20	——	——	20	——	ditto	40	10
Warsley	ditto	40	——	——	10	——	ditto	40	——
Warboys	ditto	200	——	——	200	——	ditto	150	——
Water Newton	ditto	16	——	——	16	——	ditto	20	3
Wistow	ditto	40	——	——	20	——	ditto	40	10
Winwick	ditto	30	——	——	20	——	ditto	60	5
Witton	ditto	30	100	——	20	——	ditto	30	——
Wood Stone	ditto	10	——	——	40	——	ditto	40	5

Parishes.	CATTLE. Breeds.	Cows.	Stores.	Fattening cattle.	Calves reared.	Calves suckled.	HORSES. Breeds.	Horses. or mares	Foals.
Brought over									
Wood Walton	mixed, except a few Yorkshire	30	100	—	30	—	Cart kind	40	6
Wood Hurst	mixed	35	—	—	20	—	ditto	20	8
Wooley	ditto	10	—	30	7	—	ditto	16	—
Yaxley	ditto	50	—	—	60	—	ditto	60	8
Yelling	ditto	35	—	—	12	—	ditto	65	6
Total		4809	709	1198	2399	130		4686	647

From the above account it will appear that there are 9,245 head of cattle, young and old, and 5,333 horses of the cart kind.

The cattle in this county, considering the number, are remarkable for being of a very inferior sort, such as it is impossible to describe under any regular method, but they may truly be said to be of all kinds but good ones. There were but three instances which came under my inspection of any attempt being made at improving the breed. At his Grace the Duke of Manchester's there was an assortment of short-horned Yorkshire cows, and a bull of rather an useful kind; his Grace had some calves rearing, which looked very promising.

Mr. Nicholls, of Stewkley Parva, is making an improvement from Yorkshire cows, or short horned, and a bull of the Hereford kind; the bull was bred by the Duke of Bedford, and is rather an useful animal; the calves seemed very promising, and I am of opinion that a very good breed will be the consequence of this cross the flesh of the Hereford breed of cattle being rather finer than that of the Yorkshire, and that breed in general has more aptitude to fatten at an earlier age than the latter, and probably may keep them more to their milk than a cross from the long-horned or Leicester kind, although the Hereford cows have no great appearance for the dairy, nor do I think that they are adapted to that purpose, having never seen a single cow of the Hereford breed among the cows of the London cow-keepers.

Mr. Ladds, at Steeple Gidding, has got some of the long horned Leicester cows, the best that I saw in the county of any kind. It is necessary for me to observe, that good bulls are much wanted in Huntingdonshire, let them be of whatsoever breed they might. In the present inferior state of the breed, a good long horned bull would more rapidly improve the breed for flesh than any other, but this would be by no means the case for milk. The Yorkshire cows are doubtless the best for milking, being far superior to the Devonshire, in the proportion of six to fifteen. The long-horned Leicester is no better, but circumstances alter cases; if a breeder wants to breed for flesh, and aptitude to fatten at an early age, there is not a doubt, but a cross of the long horned Leicester would be preferable to all others; if for the yoke or dairy, then the Yorkshire short-horned cattle.

I am not able to speak of the Hereford breed, but although they are a distinct breed in that county, yet they certainly have the appearance of being raised from a cross, both as to their colour, horn, and shape; and have much the appearance of what is called the half-horned, their horns not being so long as the long-horned Leicester, nor so short as the Yorkshire horned. Should this have been the case, I should not recommend them as a cross to any other breed.

Now was the county of Huntingdon to use oxen for drawing, doubtless the Yorkshire short-horned bulls would be most preferable for many reasons. The cows would be very superior for the dairy, and the oxen being larger would be able to draw greater burthens, and keep growing to more advantage, as such oxen are not in perfection until they are seven years old, while the long-horned oxen are generally in perfection at four years, consequently would not pay so much money for two or three years use in the yoke, as they would not at any period come to more weight than from fifty to sixty stone of 14lb. when the short-horned would come to from seventy to eighty stone, being a difference of twenty stone of beef, which at 8*d.* per lb. makes 9*l.* 6*s.* 8*d.* an ox, difference in value, being more than half the price of the present breed.

It is not very certain to me but that the cows would make nearly double that sum in milk and flesh difference, for notwithstanding the Yorkshire short-horned steers at four years old, when brought to London, are sold for as little money or less than any other per lb. yet from their large size they probably pay as much money or more than any other breed for what they consume, and the beef is sure to always have a market for the navy.

The cows of this kind are preferred by the London cow-keepers, nor will they buy any other by choice, and the market for them keeps continually increasing from the dairy men, who used to keep the long-horned cows to make butter from in the butter counties, having many of them totally declined that breed, and using none other but the Yorkshire cows, for which reason I am inclined to very strongly recommend the short horned breed. It seems as if the market for the short-horned cows would still very much increase, from the immense numbers of buildings carrying on in London and its neighbourhood, so that the demand for this breed of cows can scarcely be had from the country which has hitherto supplied them. It is always a good maxim in all trades to provide such articles as there is sure to be a demand for, and although this county does not make a general rule of dairying, yet still I look upon a good milch cow of nearly the same value towards the *support* of a family as though the produce were sold, for according to the price of flesh, bread, &c. it is probable that milk, butter, and cheese may be as cheap as going to the shambles.

There are two meals in a day, in which all of them or the greater part of them may be produced from cows, except bread; and those dairy-women who know how to make the best of a dairy, will take much butter from those cows for sale, and make a very good family cheese afterwards. From these considerations it should seem that short-horned cattle are the most profitable where the soil suits them, and as this is not a wet county there is no doubt of their thriving. I would have the reader to observe that in situations where much rain falls, and there is not good shelter, that these Yorkshire will not answer, nor should I recommend the breed for a barren soil; for such a soil the North Devon is the most proper. Upon wet black situations, and especially where they can range both winter and summer, the long-horned breeds are the best adapted. It is reduced to a certainty that no cattle will stand stall and fold-feeding equal to the Yorkshire short-horned cattle. The oxen are a slow but strong team, and for the use of odd jobs and treading land may be the best, but for ploughing or for long drift in lieu of horses, the North Devon excel all others, as they are not liable to injury by being over-heated from drawing, (or what is termed *hot stomached*) which I have known many oxen of a large kind, and some that have an aptitude to fatten, to be. Now were the cattle of this county, by only being at the expense of getting better bulls to the cows, to make only 5*l.* a head more at the age which they are parted with than they now do, this of itself would be a consideration worthy of attention.

On Worked Oxen.

I observed but one farmer who used oxen in this county, but there are many situations where they might be advantageously made use of. On *all large farms* they would profitably assist in fetching home harvest, leading dung cart, and all other odd jobs, as they are kept much cheaper than horses; consequently there ought to be no greater quantity of horses kept in any farm than can be kept continually at work. Were oxen kept for all jobs

they

they would live on straw in the winter, and work half a day; or two or three days in a week, making manure in winter and eating *no corn*, and in summer being depastured among the ewes and lambs; and, in some situations where dung is much wanted, if stall fed on clover, vetches, lentils, &c. they would make immense quantities of dung, this would be especially an advantageous method on the thin stapled lands which are naturally not proper for natural grasses, and not well watered; there would also be very great advantages in working oxen on such soils, such as for treading the clover lea when it was sown with wheat, and also for some spring crops such as oats and pease, when sown on lea land.

I found oxen from my practice in Ireland to be the best team for the scarifier; on account of their moving in so slow a manner, the holder of the scarifier had time to shake off any sods which might burrow against it; the scarifier ought to go very steadily, and also as deep as the plough; for if it rises, at times it will be apt to gather heaps of sods, and in such quantities as very often to prevent the land from being got into *proper* order at all, whatever means may be used; and likewise often misses a part of the land which most required scarifying, so that the greatest care should be taken to keep the scarifier at the bottom, so as to miss no part of the land, exactly the same as in ploughing. Oxen were formerly much drawn or worked in a large harrow called an ox-harrow; which certainly seemed to me at that time to be a very awkward implement, on account of its great weight and very slow movement; seeming not to pulverize land so quickly or properly as the jointed horse-harrow; but I now think it a very proper and excellent one to be drawn over land by oxen, previous to the horse-harrow.

By four or six oxen treading down those tough sward furrows, before the horse-harrow comes upon them, the seed is prevented from being buried underneath them, and from the steady movement of ox-harrows, they are not so liable to lift up the edges of the furrows as horse harrows, which go in a jerking manner to and fro; I am of opinion that many failures take place in crops for want of this kind of process on lea lands, of which I could mention many instances.

I have known many misfortunes happen to crops of wheat in particular, from the land being left light; consequently I am decidedly of opinion that ox-teams will be found highly advantageous in obviating them, and very probably would be one very great means of preventing the ravages of the mildew. It may be, that I am prejudiced in favour of ox-teams from having been brought up on a farm where they were so much used; I have known my father buy oxen to draw, and by gentle usage and easy working they have nearly doubled their original cost in one year, or a year and a half without any *costly keeping;* this was effected by *good order,* the land on that farm being chiefly of a *poor nature.* However I am by no means partial to ploughing with oxen; for this, horses are very far preferable, nor do I like to work oxen hard, so as to fill the places of horses entirely, there being nothing got by so doing; for if oxen are so hard worked as to prevent their growth, then it becomes a stand-still business indeed; as I have before observed from *attention* and *easy working,* our oxen at my father's were by the time that they were ready to turn out of the yoke half fat, and were seldom, if ever, more than five months *idle* before they came to the shambles; this, therefore, is the *profitable* way of using oxen, using them gently, paying attention to a proper quantity of good and proper food for them, and never *over-working* them, only making a *partial* use of them, as I have

I have before observed in all odd jobs; scarifying, harrowing, carting dung, and such like. I have taken the liberty of making these remarks that I may not be misunderstood, but that it may be known how far I recommend "worked oxen;" and as in Huntingdonshire they are scarcely known except by name, I considered it as the more necessary.

Another thing I have to mention, respecting the kind of harness proper for working oxen, and this is yokes and hoops, which are not only much *cheaper*, but *infinitely superior* to all other kinds of harness for oxen, as a cart saddle sets very awkwardly on the backs of oxen; and further than this, I am thoroughly convinced that if a pair of oxen were put to a cart, having been used to draw side by side with yokes and hoops that in that way they would draw a very considerably greater weight than oxen drawing one before the other in the *expensive horse harness.* An ox is remarkably strong in his neck, and it may be observed in a team of horses, whenever the waggon happens to get set fast, that the waggoner always, if he should happen to have four or five horses drawing before each other, or what is termed *single*, takes off the two leading horses, and hangs them to the shafts in order to extricate the waggon; a strong proof that by horses, when drawn side by side, much greater weights are drawn; besides this, it is a well known fact that either horses or oxen travel much more chearfully side by side, than singly.

I cannot for my own part imagine how it came that oxen were drawn one before another in horse harness, as it is every way a disadvantageous method, and the *harness for one ox* in that way, costs as much as *yokes and hoops for four oxen.* Although ox teams might be very profitably made use of in many parts of this county, it seems to be only impracticable on account of the perverseness of servants, for in conversing with farmers on the subject, their general remark was that they should never be able to get their men to execute it. I observed one farmer particularly to say that he had used oxen, but his men used very unpleasant and refractory expressions in his presence, and his scheme ended in the death of one ox from being overdriven, and in another being very much injured, and this in the neighbourhood of a much respected nobleman's estate where many oxen are drawn; but prejudice, and especially that of labourers is a wonderful thing. I know that pairs of horses would plough any land in the kingdom with proper ploughs and at a proper season, but here again the deep rooted prejudice of servants who have been used to plough with *four, six, or eight horses* operates as a prevention. But really after all, these are but very idle bars to improvement, and would be soon overcome, would farmers exert a *proper authority*, and resolve to be *masters* of, instead of being what they are too frequently, *servants* to, their *servants*. Of the salutary effects of this exertion I have known many instances, but the result must be so self-evident that I am sure I need not relate them here.

On Stilton Cheese.

Before the subject of cattle is concluded, it is necessary to make some observations regarding that celebrated article called Stilton cheese.

Mr. Nichols, in his History and Antiquities of the County of Leicester, where he gives an account of the parish of Little Dalby, writes thus: "This lordship is famous for having first made the best cheese, perhaps, in the world, commonly known by the name of Stilton cheese, from its having been originally bought up and made known by Cooper Thornhill, the landlord of the Bell Inn at Stilton. It began to be made here by Mrs. Orton about the year 1730, in small quantities, for at first it was supposed that it could only be made from the milk of the cows which fed in one close, now called Orton's close; but this was afterwards found to be an error. In 1756 it was made only by three persons, and that in small quantities, but it is now made not only from one, but from almost every close in this parish, and in many of the neighbouring ones. It is well known that this sort of cheese is made in the shape and of the size of a *collar* of *brawn*. It is extremely rich, because they mix among the new milk as much cream as it will bear. It requires much care and attendance, and being in great request, it fetches 10*d*. per lb. on the spot, and 1*s*. in the London market."

But Mr. John Pitts, landlord of the Bell Inn, Stilton, as well as Mr. Maxwell, contend with the greatest probability of truth, that the famous Stilton cheese was first made at Stilton in Huntingdonshire.

Mr. Pitts' reasons for maintaining that opinion, are given in the following account, drawn up from Mr. Pitts' own relation of the case. "Mr. John Pitts, landlord of the Bell Inn at Stilton says, that he has every reason to believe, that the cheese known under the name of Stilton, was originally made at that place; that one Croxton Bray, a very old man, who died about the year 1777, aged about eighty years, remembers very well when a boy, that he, his brothers and sisters, and the people of Stilton in general, sent their children about to collect all the cream in the neighbouring villages, for the purpose of making what is called Stilton cheese. The receipt for making it is, the cream of the evening and morning, and the new milk all mixed together. This must have been long before Mr. Cooper Thornhill's time. Mr. Thornhill selling great quantities, and wanting more than could be had at Stilton, and knowing that Leicestershire produced excellent milk, and having relations in that county, he sent a person to them to instruct them in the mode of making it."

None of this cheese is now made at Stilton, though there is every reason to believe that it originated there, and not in Leicestershire. It is evident, indeed, from the above account, and the testimony of Mr. Pitts, that it began to be made at Stilton, when Croxton Bray was a boy, which must have been previous to the year 1720, at least ten years earlier than the time when it began to be made at Little Dalby in Leicestershire, according to Mr. Nichols's concession, who candidly admits that the cheese bearing the name of Stilton did not begin to be made at Little Dalby, till about the year 1730.

SECT. II.—HORSES.

It is observed in a former report of this county, that the farmers chiefly use mares for farming purposes, breeding foals to keep up their stock, which by the account inserted before, it will be seen is perfectly correct. It is certainly a very good method for a farmer thus to keep up his stock, and were the mares of a better kind, much would be added to the profits of the farm by so doing; as the horses which would be spared from the number bred, would take no more to raise them, and would when sold fetch much more money. The sort which is bred at present is merely for slavery, not having sufficient shape or action to make them valuable for gentlemen's coaches, &c. an improvement which might readily be effected by using proper stallions to the present mares; as a proof of this, in many parts of Yorkshire there are farmers who breed the bay coach horse, using the mares and the foals, when arrived at a proper age, for all agricultural purposes.

Many small farmers in those parts sell their foals at Michaelmas, and I have known Lincolnshire farmers go to the Yorkshire fairs at that season, and buy from twenty to thirty foals at half a year old at the price of a common three or four year old horse, and when they were two years old, take them into use for farming purposes; keeping them in such work for two years, and then selling them for about three times the original cost. Those Yorkshire horses are much better horses for ploughing and expediting work, than the heavy cart or dray horse, and as the colour of a coach horse is not so much attended to as formerly, the mares of this county being of various colours, would be no impediment to the improvement here suggested; it may be necessary here to observe that farmers in Lincolnshire had oxen to assist in the operations of the farm, as I have just shewn under the preceding head, which materially assists the farmer in breeding foals from his mares; as will I think appear by the following account of my father's method of raising foals.

Our mares were of the large dray breed, but with much more action than is generally to be found in that breed at present; this loss of action has arisen from finding that the dealers would give much higher prices for the large lumbering cart-horses with a vast quantity of hair on their legs, and of great weight, from which they could draw *greater weight*, and also keep their feet much better on the *London stones*; than they would for horses of less weight and more action. We kept four of those mares to plough the land, *always ploughing by pairs side by side*, and they walked as fast as a man could conveniently follow, though the land was a remarkably stiff clay, and was altogether as strong work as it is possible for any land to be, being very full of very large ant-hills and much infested on the sides of the lands, the ridges and the furrows, with rushes and hassocks, our plough being the Rotherham swing plough; I am particular in mentioning this to shew that there is no necessity for those four-horse teams for ploughing at all. The four mares were all put to the horse, with the intention of raising two or three foals for sale at three years old. When the foals were taken from the mares which was generally about September, the mares were then employed in ploughing the clover lea, which was harrowed by four oxen; generally having a two years old filly put before them; or if not, a fifth mare of some kind, which was a kind of hackney mare.

The large ox-harrow had, in this process of harrowing in the seed wheat, a pair of horse-harrows attached to it by a long piece of iron, so as to follow the larger harrow; thus one boy or man drove the oxen and the horse, and harrowed with two pair of harrows. The wheat-seed process being over, the next business was fallow for turnips, which was always compleated before Christmas, the land being all as regularly gripped, as though it had been sown with wheat; the next proceeding was to plough up any sward land, intended for oats, pease or beans, and as the turnips were eaten off by the sheep, the ploughing was kept up close after them; then as soon as the weather became dry enough in the spring for the sowing of the seed, the oxen were again used for drawing the large harrow on the sward or lea land, while the mares drew the light harrows; the clover was always sown with the barley or oats; and I never knew us miss a crop, or even have a thin crop. As soon as the spring seed was got in, our next proceeding was to harrow the fallows with the large harrow as on the clover lea; then our four mares were used to plough such land as wanted it, what is called stirring it; by the time that this was done, the mares would begin to foal, and we had no more ploughing until the turnip sowing came on, and our oxen were employed in carting out dung from the fold, which was always regularly done before the 10th of May; from which time until about the 1st of June, there was leisure both for the oxen and the mares, except some slight jobs for the former and the mare or two which sometimes missed being with foal; such as gathering up faggots where hedges had been plashed, &c.

It was our custom as soon as the mares foaled to put them to grass, giving them corn in troughs on the pasture. When the turnip sowing came on, the mares had generally foaled about one month, they were then taken to plough the land for the turnip crop, having a pair or sometimes two pairs of oxen, and a horse to harrow the land; and then harrow in the turnip seed with a light pair of harrows drawn by one horse, which was generally taken from before the oxen, which were thus rested while this part of the operation was going on. The turnips being sown, the mares and foals were put into pasture, not being any more worked until wheat sowing. If three of the mares happened to have foals, and one of them a filly foal; the one with the latter, and the one which might have missed foal, were used during summer in leading hay and harvest; by such *regularity*, there were generally five foals raised in two years from four mares. My reason for having entered into this detail of our management is my anxious wish not to omit any thing which may tend at all to the improvement of any branch of rural economy in this county, and from the similarity of the soil and nature of my father's farm to a vast number in this part. I have done my endeavour to prove that horses of superior value may be raised by their mares which they have at present. at no *additional expence*, by only attending to *regular order and method.*

SECT. III.—SHEEP AND HOGS.

Parishes.	SHEEP. Breeds.	Number of fleeces to a todd.	Number of young and old Sheep.	HOGS. Breeds.	Number.
Abbotesley	Horned and white faces	10	1300	mixed	70
Alconbury, &c.	Lincoln and Leicester	5	2600	ditto	300
Alwalton	ditto	5	560	ditto	200
Barham	ditto	4	600	ditto	30
Bluntisham	ditto	4	600	ditto	200
Brampton	ditto very good	3 to 5	1500 fed	ditto	50
Brington	Lincoln and Leicester	6	600	ditto	40
Broughton	ditto	5	1500	ditto	100
Buckden	Polled	6	6000	Berkshire	150
Buckworth	Leicester	5	2000	mixed	50
Bury	Lincoln and Leicester	5	1000	ditto	50
Bythorne	ditto	5	3500	ditto	60
Catworth	Leicester	5½	5000	ditto	150
Caldecot	Lincoln and Leicester	5 to 6	1000	ditto	70
Chesterton	Leicester	5 to 6	1400	Berkshire	40
Coln	Lincoln and Leicester	5	600	mixed	100
Conington	ditto	3 to 4	4000	ditto	200
Covington	Leicester	5	1000	ditto	40
Denton	Lincoln and Leicester	5	540	Berkshire	26

Doddington	New Leicester	5	1000	mixed, white pigs of more value than others for London market.	130
Easton	mixed, except one flock of new Leicesters	5	700	mixed	30
Elton	Old Leicester	3 3 4	5000	Berkshire.	150
Ellington	part mixed, part Leicester	5	2000	mixed	100
Everton	part polled, part horned	6	650	ditto	40
Eynsbury	ditto ditto	5	340	ditto	200
Farcet	Lincoln and Leicester	4 to 5	1500	ditto	50
Fenny Stanton	Leicester rams, and horned ewes	7	1000	Norfolk, much approved.	400
Fletton	Lincoln and Leicester *very good ones*	4 to 5	1000	mixed	40
Folkesworth	mixed	5	600	Berkshire	40
Gidding Magna	ditto	6	2000	ditto	150
Gidding Parva	ditto	5 to 6	308	mixed	20
Glatton	ditto	6	1500	ditto. of a good sort.	120
Godmanchester	ditto	4 to 5	1000	mixed	200
Graveley	ditto	4 to 5	180	ditto	50
Graffham	ditto	5	1200	ditto	60
Gransdon	ditto	10	1200	ditto	100
Haddon	Lincoln and Leicesters	3 to 6	1160	ditto	40
Haile Weston	Leicesters	5	850	ditto	300
Hamerton	ditto	5	2000	ditto	100
Hartford	Leicester and Lincoln	5 to 6	1700	ditto	200
Hemingford Grey	Leicester ram, and horned ewes	6	300	ditto	80
Hemingford Abbots	Lincoln and Leicester	5	800	Norfolk	100

Parishes.	SHEEP. Breeds.	Number of fleeces to a todd.	Number of young and old sheep.	HOGS. Breeds.	Number.
Hilton	part polled, and part horned	6	1000	mixed	100
Holme	mixed	6 to 7	700	ditto	150
Houghton	ditto	5	800	ditto	100
Huntingdon	ditto	7	200	ditto	200
Keystone	ditto	4 to 5	2000	ditto	60
Kimbolton	Leicester	5	5000	ditto	100
Leighton Bromswold	ditto	4	3500	Bakewell	150
Long Stow	mixed	7	500	mixed	100
Luddington	ditto	6 to 7	700	ditto	100
Lutton	Lincoln and Leicester	5 to 6	1500	ditto	50
Molesworth	ditto	6	1000	Berkshire	100
Morborn	Old Leicester	4	1000	mixed	70
Needingworth, &c.	mixed	5	2800	Norfolk	400
Offord Cluny	Leicester	5	1200	Berkshire	100
Offord D'Arcy	mixed	7	1000	mixed	80
Old Hurst	Lincoln and Leicester	4 to 5	700	ditto	60
Old Weston	ditto	6	1000	ditto	120
Overton Longville	part old, and part new Leicesters	4 to 5	2500	ditto	25
Overton Waterville	mixed	6 to 7	800	ditto	100
Papworth	ditto	4 to 5	850	Berkshire and Suffolk	200
Paxton Magna	ditto	7	900	mixed	100
Paxton Parva	New Leicesters	5 to 6	800	ditto	110
Perry	Small polled	8	600	ditto	50
Pidley	Lincoln and Leicester	4 to 5	1000	Berkshire very good	200

Ramsey	mixed	4	2000	mixed	200
Raveley Magna	chiefly Leicesters	5	1000	ditto	120
Raveley Parva	Leicester and Lincoln	4 to 5	500	ditto	50
Ripton Abbots	ditto	4 to 5	2000	ditto	80
Ripton Regis	ditto	4 to 5	800	mixed	100
Sawtry St. Andrew	mixed	6	2000	ditto	250
Sawtry St. Judith	ditto	4	1800	ditto	100
St. Neot's	New Leicester and mixed	5	3000	Suffolk	200
St. Ive's	Leicester and Cambridge	4 to 5	900	mixed	80
Somersham	Lincoln and Leicester	4	1000	ditto	90
Southoe	Leicesters	4 to 5	1400	ditto	100
Spaldwick	New Leicester	5	1000	ditto	70
Standground	Lincoln and Leicester	3 to 5	3000	ditto	60
Stebbington	ditto	4 to 5	800	ditto	120
Steeple Gidding	Leicesters, very good	4	700	ditto	30
Stewkley Magna	Lincoln and Leicester	5 to 6	2000	Berkshire	70
Stewkley Parva	New Leicester, and mixed	4 to 5	1500	mixed	200
Stilton	mixed	6 to 7	1000	part Berkshire, very good	200
Stoughton	ditto	7 to 8	1000	mixed	80
Swineshead	Leicesters	6	1000	ditto	100
Thurning	mixed	7	500	ditto	50
Toseland	horned and mixed	9 to 11	600	ditto	40
Upton	mixed	6 to 7	600	ditto	30
Upwood	Leicester and Lincoln	5	1000	ditto	200
Warsley	horned	9	800	ditto	100
Warboys	Leicester and Lincoln	4 to 5	3000	ditto	300
Water Newton	Leicester, and mixed	3 to 5	1000	Berkshire, and mixed	150
Wistow	ditto and mixed	5	1500	Berkshire	70

Parishes.	SHEEP. Breeds.	Number of fleeces to a todd.	Number of young and old sheep.	HOGS. Breeds.	Number.
Winwick	mixed	6	1400	mixed	100
Witton	mixed for fattening, Leicesters for stores.	5	1200	Suffolk	70
Wood Stone	mixed	5 to 6	700	mixed	60
Wood Walton	New Leicester, Lincoln and Leicester.	5	1400	Berkshire	100
Wood Hurst	Leicester and Lincoln	4 to 5	500	mixed	60
Wooley	ditto ditto	4	700		40
Yaxley	ditto ditto	9 to 4	1500	Berkshire	200
Yelling	horned and mixed	7 to 8	1200	mixed	160
	Total		141,558	Total	11481

The average of the number of fleeces to a todd, through the whole county is nearly five and one-third.

Sheep.

THE sheep of this county, generally speaking, have now much more the appearance of the new Leicester than any other breed, although from the general account it will be seen that they are chiefly said to be a mixture of the Lincoln and Leicester; a great part of them are very inferior to what they ought to be, and as I before said, are, generally speaking, of the new Leicester, many of them being of the very worst of that species; which are the most unprofitable that are kept of the polled or improved kind. They are many of them very little better than dunks, which kind of sheep are very light in carcass, and worse in wool; and if they are to be made fat at all, are worth but little, and there are indeed many of them which it is as utterly impossible to make fat, as it would be to fatten any one who was in the last stage of a consumption. I saw sheep of the new Leicester kind in this county, not worth having, as a gift, to keep a year; for sheep of a good sort bought at a market price would yield *more profit* for a year's keep than they would *be worth*. I observe in the former report, that the wool was then about 8lb. per fleece on an average of the whole county (that was thirteen years ago); and it now will not yield 6lb. per fleece on the average, which is in proportion to the declension in the weight of fleeces in the county of Rutland.

I should be sorry for the reader, from my observations on the new Leicester, to think that on that account I infer that the whole of the sheep of that species are bad, as this is far from being the case; but there are many reasons why there are so many bad new Leicester sheep, for almost every man who rode a new Leicester ram, turned tup breeder; and perhaps his stock proceeded from a very bad ram, and an ewe of the same kind; by such means they have spread very rapidly, and on some account there are great numbers of very bad sheep of that kind; they are allowed by the cutting butchers in London to be of two descriptions, viz. *very good and very bad*, the best of the new Leicester sheep being probably the best carcases of any, and worth more money at an *early age* than any other sheep; it is allowed on all hands, that an old Lincolnshire sheep, having about what the cutting butcher terms one-fifth of the new Leicester, is the most profitable sheep that comes to the London markets.

I am clearly of opinion that a very good new Leicester ram, put to any ewe of another breed, will improve the carcass more than any other breed of sheep whatever, but not so the *fleece*. The different crosses which have been taken to old Lincolnshire ewes, old Leicesters, Oxfords, Rutlands, and many other counties where long wool is produced, have reduced the *weight of wool* one-fourth, nor do I think that the *quality* is any thing improved, for though *finer*, much of it is *curled* and *mossy*.

The following flocks were among the best in this county: At Kimbolton the sheep shear about five three-fourths per fleece, and there are some very extraordinarily good carcassed sheep, their dead weights being 34lb. per quarter; at Steeple Gidding the fleece weighs about 7lb. and the year old wethers were most extraordinarily good ones, larger than those at Kimbolton, but not near so fat, as the latter were one year older. At Conington the hogs give three fleeces to a tod, and the ewes four, which is about 8lb. per fleece. At St. Neot's, where they todd four, five, and six fleeces, I saw one flock of very high blood, but the oldest are the best, and I do not think the fleeces averaged above 5lb. At Standground, I saw two wethers three years old, weighing upwards of 40lb. per quarter, the wool being of a very good quality, but these were of a mixed breed, being about three-fourths old Lincoln, to one-fourth new Leicester. Now though I have selected these as the best flocks in the county, there may be flocks equal to them, that may either have escaped my attention, or I was not shewn them; consequently I hope I shall give offence to none, that being very far from my intention, my wish being to act as impartially as possible.

I have observed that there are flocks in the same parish, where the weight of the fleece of the one shall be from three to four to a todd, and in the other from five to six; this plainly shews that if the same attention was paid by one breeder as another, the weight of the wool would be the same. It frequently happens that the carcass of the sheep which clips from 7lb. to 8lb. of wool, will also weigh from 4lb. to 6lb. a quarter more than the sheep which only clips 5lb. of wool; so that there is a loss from this *inattention* of 20lb. of mutton *on an average*, which at 8*d*. per lb. is 13*s*. 4*d*. a head in the carcass; and in wool, supposing each kind to be sheared three times, and supposing that the one clips 8lb. and the other 5lb. that will be altogether in wool 9lb. which for the sake of even numbers we will take at 28*s*. a todd, (though the price has been higher this year), that will be 9*s*. in wool, which added to what is gained in carcass will be 1*l*. 2*s*. 4*d*. advantage in one sheep, a consideration highly worthy the attention of breeders, whether considered as appertaining to themselves, their landlords, or the community; besides I have always found that a good animal takes less supporting than a bad one.

The term dunks, which I have used, seeming to be strange to many breeders in this county, it may not be improper to say something respecting them; they are small formed, a short head, broad in the forehead, and large in comparison with the neck, which latter is very thin, and what many have plumed themselves much for procuring, and what is termed a fine or thin crag, the small end of a neck of mutton being by such termed offal; their eyes being like those of a frog, their ears standing wide and rather hanging down; their necks, as before observed, small, with no neck vein, but falling off immediately from the shoulder, the blade bone of which stands up much higher than the chine, seeming to act in a loose manner, their ribs being round, and like the hoops of a cask so as to be very hollow within, and having from their inaptitude to fatten but very little flesh or fat there; and although when alive they handle to advantage, and appear to have some fat upon them, yet when killed and their entrails taken out, they are so very light of flesh, that the light will shine through the loins within two or three inches of the back bone, their hind quarters being generally very short (what is termed wiped away) being light in the thigh, so that when *fairly* cut, the leg is very small and light, and their tails are very small; thus, from the extreme smallness of their necks and tails, they are small also all along the back, which is the prime part of every animal; in cutting up they are proved to have very little of that prime flesh on each side the back bone which they ought to have, therefore what was thought to be a perfection, has fairly proved to be the greatest imperfection.; from this want of flesh they have very little fat either *within* or *without*.

I have seen some of such sheep when killed, being as fat as it was possible to make them, weigh 56lb. a carcass, or 14lb. per quarter, when I am clearly of opinion that the sheep which ought to have been grazed where they came from, would at the same age, with the same food, have weighed 80lb. a carcass, or 20lb. per quarter. Now from this calculation, there will be a difference of 24lb. a sheep; at 8*d.* per lb. it will be 16*s.* a piece difference, then the wool will be 9lb. as before, and 9*s.*, in all 1*l.* 5*s.* which at one sheep and a half per acre will be 1*l.* 17*s.* 6*d.* which being divided by four, for the four years, will be 9*s.* 4½*d.* per acre, which is certainly a sum very much worth every breeder's strictest and most serious consideration.

Now the sheep termed dunks being so imperfect from nature, it seems to me to arise from their *deformity*, and is similar to a deformed shape in the human race, it being very seldom that a man who is deformed, is inclined to be of large size, or fat. It appears that their head, although not very large, yet is heavier than it ought to be, in proportion to the chine; as when they move, their heads seem to shake, similar to a paralytic affection; and if they meet with the least obstruction, such as ant-hills, &c. they will tumble down on their knees, and from the shaking of the head, when they come to be killed, at that part of the neck which is called the crag, there is found a bloody substance, which is obliged to be cut off and thrown away, being totally unfit for use, and instead of those sort of sheep having less offal than sheep of a greater weight, they have *much more*, for as many of them weigh but 56lb. a carcass, were the head, the bones, the skin, (although very thin), the pluck, blood, entrails, &c. weighed and proportioned to their useful flesh, (which in fact should not be termed *useful* but *usable*) there would be found much more offal in one of them, according to their weight, than in a sheep which weighs 160lb., when the latter would probably have 40lb. of fat in them, and the former not more than from 7lb. to 9lb. Instead, therefore, of their having *no offal*, as has been boasted, it fairly appears they are nearly *all offal*, or at least *unprofitable;*

and instead of those *nice* breeders having bred sheep which were to pay the greatest profit for the food which they consume, they have so far missed their aim as to breed animals of so delicate a frame, as to have neither much flesh nor wool, and consequently paying the least for food.

From all my experience, I am of opinion that these small sheep consume as much food as those do which are as large again; from their extreme tender constitution, without much care they will starve and waste away; now there are small animals which are of a hardy nature, such as Scotch sheep, Mountain sheep, on the commons in Westmoreland and Cumberland, which would live where a good Lincolnshire sheep or a new Leicester would be starved; but those sheep I have alluded to, require as much or more care to keep them *even alive*, than any sort whatever, for when they are seen in pastures with other sheep of the *good kind* of New Leicesters, the latter will be very fat, and the former as poor as "*church mice*;" I saw an instance of this in this county, on a farm which was in every instance managed to the greatest nicety; so much so that it is very probable there is not one farmer in England who could excel the occupier of it, every thing being managed in the correctest manner, and he has also attended equally to his breed of sheep as to the other parts of the farming process.

I was informed that his sheep were very famous; on viewing them I found many good ones among his breeding ewes, but there was to be seen among them something of the dunk; and when I came to view his year old sheep, ewes and wethers altogether, on as fine a piece of rye-grass and small seeds as ever were seen, among them it might truly be said that there were three sorts; some very good ones, some in the medium way, and *some very bad*; and as this gentleman had given very high prices for New Leicester rams from a very capital breeder in that county, I was therefore so much alarmed at this sight, that I went into Leicestershire, and found generally among the ram breeders in that county very good carcass sheep, but a want of wool. To my utter astonishment I was shewn a shearling ram at one of the principal breeders, which did not weigh more than 60lb. the carcass, or 15lb. per quarter, and from the smallness of him could not clip more than 5lb. of wool, and if we are to suppose that *like will get like*, what then was to be expected from a ram of this description?

Now within less than two miles of the place where I saw the ram I have just mentioned, I saw some new Leicester rams which weighed 200lb. a carcass, or 50lb. per quarter, from which circumstances it appears clear to me that like will get like, as I found the same disparagement among the rams, that I had done among the offspring produced by them. It is really astonishing, that when a man is going to breed stock of any description, how he persuades himself, when he takes one of these small light woolled rams, that it is in any wise possible that he should reap a profit from such a sire; for it certainly would be as plausible for him to suppose that from covering a good mare with a Welch or Scotch poney, he should have a thorough bred race-horse. Among those rams in Leicestershire, there are certainly some of the *best and worst carcased* sheep that are any where to be met with, and it may be truly said that a rage for fashion has got the *ram breeders* into so awkward a dilemma. However what they have thus lost in one way, is made up in another kind of *ingenuity*, viz. to be able to persuade the breeders that what they have to dispose of is the best; but the mischief of it is, that the butcher is not so *ingenious*, for he cannot persuade *his customers* to give him as much money for a leg of mutton which weighs but 8lb. as he can for one which weighs 12lb. The new Leicesters certainly have many of them too great a proportion of fat, which the butcher is obliged to pare off and sell at the reduced price of 3*d.* in a pound of meat; therefore as in many of these sheep from a joint of 8lb. 2½lb. of fat are pared from it; this is sold at 3*d.* per lb. less than the other part, and makes a loss of 7½*d.* in one joint, but taking this at 6*d.* a joint for the ten joints, it makes a loss of 5*s.* in every sheep, or supposing this to happen on a very good sheep weighing 120lb. and calculating upon 2½lb. waste in every 8lb. that will be 37½lb. in such a carcass, which at the loss of 3*d.* per lb. is 9*s.* 4½*d.* being nearly one penny per lb. loss on the whole carcass; consequently as that must lay on the consumer, he pays one penny per lb. more than he ought, as the butcher must have a living profit.

At the time Mr. Bakewell first introduced his breed of sheep, there were great numbers of sheep of such a coarse, large boned, fleshy sort, as to take much longer time in fatting than they ought to have been: one cross of his sheep would have been very useful, and I think his sheep at that time were more perfect than they are to be met with now, both with respect to wool and carcass; the very long wool that was fourteen or sixteen inches in length, weighing from 16lb. to 20lb. a fleece, would have been reduced to ten or twelve inches, and weighed 14lb. or 16lb. a fleece, so that had the rage of fashion not gone too far, but stopped at a proper time, much good would have ensued.

When I was in Ireland, I dined at a gentleman's table where there happened to be a shoulder of mutton weighing 11½lb. and it was judged by the company that there were not 2lb. of fat. As there were in England at one time many sheep of that description, on which a mixture of the two extremes would have formed a breed of a very good sort. It appears plainly what is wanting at present in Leicestershire, and many other counties, (viz.) more flesh and wool, the general complaint being that the sheep have got too short, are of little weight, and very light in wool.

SECT. V.—SHEEP-FOLDING.

THIS is much practised in this county, but there is not such preference given to it as in many others. I shall for the better information of the reader, give a list of a few parishes that sheep-fold the most, stating the number of acres in tillage, meadow, and pasture in each; and the produce of the wheat crop, the practice being generally for that crop on the summer fallow.

Abbotesley, Has but twelve acres of pasture, fifty acres of meadow, and has one thousand and forty-one acres of tillage land; about one-fourth of which is in wheat, previously sheep-folded by one thousand three hundred sheep; the produce of the wheat is fifteen bushels per acre.

Gidding Magna, Has fifty acres of pasture, one hundred acres of meadow, and one thousand eight hundred and fifty acres in tillage, one-fourth folded with sheep (two thousand); the produce of the wheat twenty bushels per acre.

Hilton, Has but fifty acres of meadow and no pasture, but the balks in the open fields when in fallow, and one thousand acres of tillage, one-fourth of which is folded by sheep, one thousand; produce of the wheat crop, twenty bushels per acre.

Luddington, Twenty acres of pasture, forty acres of meadow, and one thousand nine hundred and forty acres tillage, one-fourth

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fourth of which is sheep folded by seven hundred sheep; produce in wheat sixteen bushels per acre.

Stoughton. One hundred acres of pasture, forty in meadow, tillage one thousand eight hundred and sixty; one-fourth folded by one thousand sheep; produce of wheat crop, seventeen bushels per acre.

Swineshead. One hundred acres of pasture, forty meadow, and one thousand eight hundred and sixty tillage; one-fourth folded by one thousand sheep; the produce of the wheat crop twenty bushels per acre.

Yelling. Fifty acres pasture, one hundred acres of meadow, one thousand two hundred and sixty acres tillage, one-fourth folded by one thousand two hundred sheep; produce of wheat twelve bushels per acre.

Warsley. One hundred acres pasture, eighty acres meadow, seven hundred and fifty acres tillage, one-fourth folded by eight hundred sheep; produce of wheat twelve bushels per acre.

I shall now insert the names of those parishes which do not sheep-fold, and manure with common yard-dung, giving their produce per acre in wheat.

Buckworth, Twenty bushels.
Caldecot, Sixteen bushels.
Farçet, Twenty bushels.
Fletton, Twenty bushels.
Folkesworth, Twenty-four bushels.
Haddon and Needingworth, Twenty bushels.
Overton Longville, Twenty-eight bushels.
Ravley Magna, Twenty-four bushels.
Standground, Twenty four bushels.
Steeple Gidding, Twenty bushels.
Stewkley Parva, Twenty bushels.
Water Newton, Twenty-five bushels.
Wood Stone, and Wood Walton, Twenty bushels.

I shall now give an account of those parishes, which do somethtng out of the common way in manuring with their produce in the wheat crop.

Conington, From bone manure, thirty-two bushels.

Elton, From lime, twenty bushels.

Hemingford Grey, From paring and burning, and manuring the clover, twenty-four bushels.

Ramsey, From paring and burning, twenty-six bushels.

Raveley Parva, Paring and burning, twenty-four bushels.

Southoe, From six loads of pig dung per acre, twenty bushels.

Spaldwick, From the dung of animals feeding on linseed cake, twenty bushels.

Yaxley, From paring and burning, twenty-eight bushels.

Average produce of the sheep-folding practice	16¾	bushels.
Average produce of the yard-dung practice	21⅜	do.
Average produce of other manures, &c.	24¼	do.

Nothing can more plainly shew the abominable tendency of summer fallows and sheep-folding, than the above plain unvarnished facts, which speak so plainly for themselves, that volumes written on the subject could not speak more decisively. Surely no man will persist in so erroneous a system, with such proofs of its pernicious tendency staring him in the face; in fact, to speak boldly and candidly, he ought not to be permitted to do it, the loss by it to the nation at large is beyond calculation, almost in wheat alone; and were the loss occasioned in sheep added to it, surely, surely it would make the most *inveterate enemy to improvement* shudder as he contemplated it.

In the parish of Abbotesley, it may be observed, there are only sixty-two acres of meadow and pasture, the remainder of the parish being either in clods or corn crops, and yet there are 1300 sheep kept; is it not a wonder how the sheep exist? and what can such poor animals after running about the whole day in search of food, have to carry at night to a fold?

At Molesworth one farmer lost 260 sheep out of 320 in one year, under the miserable system of summer fallow and folding; nor can this be wondered at, when the reader considers the circumstances I have just mentioned. The injury done the sheep from the practice is very obvious, for were sheep which are fattened in the rich pastures of Lincolnshire, to be driven several miles a day, it would totally prevent their getting fat even on such rich pastures as they have to go to; for it is a well known fact, that only by getting those sheep up into a fold once a week, and handling them over, which is sometimes done when they are lightly affected by the scab, (what is there called bletchy), but by no means so much affected by it, as in itself to be injurious, is a great injury to their thrift. Now if instead of pursuing the practice of summer fallow and sheep-folding, the land was to be ploughed as directed under the head of fallows, early in autumn, or before the winter sets in, and then early in the spring months pulverized and sown with rapes, lentils, tares, &c. and eaten off by sheep; by that proceeding a cover would be kept on the land part of the summer months, and the produce, however used, would really add to the dung-hill; this might be done where clover was not proper for the land, or where the land wanted clearing of couch grass or other noxious weeds, as there would be sufficient time in the month of April and May to clean the land, to lead dung upon it, and sow rapes; which if sown in the last week of May or beginning of June, would grow a very strong crop to be eaten off by sheep in August and September; or even if not eaten off till October, there would be sufficient time to sow wheat on the land, as, should it come wet weather, it would not injure a wheat crop to be sown on land, which had been trodden by sheep at that season of the year, in the manner it does spring crops when they are sown on land poached by the treading of sheep, as the winter frosts would be sure to make that land light enough, let it be of ever so coherent a nature.

I am of opinion, that if one part of a field had its crop eaten off very dry by sheep in August, and was then sown in a dry season with wheat, in September, not *being trodden* by sheep or cattle afterwards, and another part of the field had its crop eaten off by sheep in a wet time, and sown with wheat in that state, that the latter would prove the most productive; but of this the very reverse in all spring crops. There may be many reasons why summer fallows and sheep-folding became a practice when land was generally open, and almost every parish had a sheep common; and farmers had open field tillage lands, so that *whatever dung* his sheep brought from off the common was laid upon his own land, which seemed to be a real gain, the *robbing* the common not being an immediate injury to himself, and he was thus sure to know where his sheep were to be found in a morning. Another reason might be, that where land was liable to rot sheep, by a shepherd being with them they were prevented from grazing in such parts as were thought likely to have that effect, and as there could be no crop on that ground where his sheep were folded.

As a further proof that sheep did not pay any money in the folding system, there are many instances when the fields and commons were open, of there being many more sheep kept, and more acres of corn grown than is the case at the present time, when enclosed.

At Eynsbury one farmer kept 340 sheep when the parish was in open fields, it has now been enclosed nine years, and he now keeps only 120 sheep, and the whole of the sheep kept in the parish are but 360, the rents being now generally double.]

At Godmanchester, since the enclosure there are only 1000 sheep kept, and there used to be when it was open fields 5000.

At Graveley, there used to be kept when in the open-field state 480 sheep, and there are now only 180; there are several more instances of this kind. It used to appear very strange how this could be the case, but latterly I have found out the truth of the matter to be, that the keeping such extreme numbers of sheep were very far from enriching any one, but it very frequently ruined great numbers; for by the losses, &c. it was but seldom any were got to send to market, and even then they were but of very trifling value. I recollect an instance of a grazier, (rich by other means) who made it a practice to clip 1000 sheep in the west fen in Lincolnshire, and I have heard his shepherd say, that he had to buy 200 or 300 to keep up his stock. Had there been a profit on the 480 sheep at Eynsbury, when in the open state equal to the present stock of 120, this would prove enclosing to be a very poor business indeed; but the fact is, that the sheep that farmer now keeps *pays him money*, while his former flock *lost him money*. On commons and open fields, farmers stock against each other, knowing perhaps that they are injuring themselves, by way of preventing one another from *enjoying* all the right of common, so to prevent their neighbou getting rich, they would *beggar themselves*. Indeed from a general view of any open field where there are sheep folded, it will be seen that the sheep are very poor, not a sprig of grass visible, and the corn crops seldom so good, but often worse than when the practice of sheep-folding is not had recourse to; so that it must have been persisted in from a want of farmers calculating *debtor and creditor*.

Because wheat has grown for many years where sheep have been folded, it is often thought that it could not be grown at all without; and I often have experienced, when I have asked whether sheep-folding was practised, a very stern look and answer "yes to be sure, or we should have no wheat," just as if wheat grew no where but where sheep had been folded, when it is very probable within a quarter of a mile of him, there is much finer wheat than his, though there had been no sheep-folding, *and he sees this every day*, and the produce is greater, as has been shewn, by seven bushels and three-quarters.

SECT. V.—HOGS.

THEY are generally of a mixed breed in Huntingdonshire, except in two or three instances.

At the Angel Inn at Stilton, I saw some very good ones indeed, which were called the Leicestershire, but I have reason to think they were *originally* from Berkshire. The boar was an uncommonly good one, from the noted boar at Fanworth, which lies partly in Warwickshire and partly in Staffordshire; the sows were also much the same as the boar.

At Pidley, one farmer breeds many hogs, very good ones, of the improved Berkshire breed: while I was there I saw one killed, which had been fattened on milk and corn at a very early age, and it proved uncommonly good; the store stock fed partly at the barn door, partly on tares and other green food, and many of the breeding sows were by such means in very high condition, indeed fatter than they ought to be to be prolific, as when they are so fat, they neglect their young ones at a very early period, and take the boar; an almost unavoidable fault of this famous breed of pigs. In several parishes the dung of these animals is so highly valued as a manure, that many are fed chiefly on that account.

At Kimbolton 200 pigs, of from five to six stone, are fed annually for the London market. From my experience in the Berkshire breed, I know that if the sows be *not well kept*, of course they will not give much milk and starve their young; if well kept, they get so fat during the time they are in pig, that their young ones when brought forth are very weak; they want to wean them at a very early age; they breed but in very small numbers at a time; they are also apt to lie upon them and kill many of them, arising partly from their great weight, and partly from an inherent sluggishness. Notwithstanding all these inconveniences they are by far the best sort of hogs that England produces, especially if kept to be more than a *year old*, as in the second year when of a good kind, they will produce double the profit to what even the best of the Chinese would do, the latter arriving at nearly their full growth in one year, while the Berkshire increase, with good keeping, as much or more in size and weight in the second year as they do in the first. I have found that a cross of another boar of the same sort *but not of the same breed*, will in some measure obviate part of the misfortunes attending the breed, viz. *not to breed from a male and female of the same litter*, which is too generally the case in the breeding of hogs, it being a general way when a person sees a litter of good pigs, to obtain a male and female, and breed from them, what is called breeding *in and in*, which is really a bad way. I have tried the method in hogs, and they decline much in constitution and get less in size, (this may have been the case in the new Leicester sheep). I have also tried the experiment in grey hounds, and the produce have never been so good as either the sire or dam, and in these latter animals perfection or imperfection is discovered at a very early period.

Notwithstanding all that has been advanced by Mr. Bakewell on this subject, I am convinced from experience that to breed in and in, is not only an improper, but an idle way of breeding useful animals. With respect to the sows getting too fat during the time that they are in the breeding state, were they not to have food of some sort to satisfy their appetite, it would cause them to have the mange, to get lousy, and unhealthy; and I have frequently in summer had great numbers of those pigs at grass, where sheep, cattle, and horses were grazing; and here they have got much fatter than they ought to be; the only means therefore of preventing the misfortunes attendant upon their bringing forth their young, is to take them into a sty a few days before they are to yean, keeping them rather scanty of food, which should be of a scouring nature such as bran or pollard, and water; and if soap suds were put amongst it, so much the better, as it would operate more like physic, and their bowels being emptied they would be cooler within, than being kept scanty of food during that time, and for a day or two after yeaning; the sow will be restless and not so much inclined to sleep, will pay more attention to her young ones, and from the expectancy of food, will lay listening, and should she tread or lie down upon one of her brood, she will then quickly get up, or as quickly move her feet.

In the time of suckling keep the sow very well, and have the sty so formed, that the young pigs may have a place to run in, into which the sow cannot enter, and in that part, place some very good food; that they may learn to drink milk and eat corn, give them milk mixed with meal of any kind, or corn unground would be better, or even the milk by itself at first; then mix it by degrees with some unground corn; for by mixing the milk and meal together a kind of paste is formed, and as it is nearly impossible to prevent the youngsters from getting their feet into it, and then jumping upon one another, they thus get so smeared with the mixture that they are much injured by it. The great reason which I have for nursing them in this way, is, that they may be able to do without the sow sooner, for as I have found that seven weeks is as long a time as those sows chuse to continue to nurse their offspring, by that time the young pigs weigh from 30lb. to 36lb. and will then, having been thus treated, do much better without than with their mothers. It is a good method in rearing young pigs in summer, while they suck to turn them and the sow into some grass field for six or eight hours after the sun is up; the young pigs by such means grow much faster, and are made much more healthy, both on account of the sow giving more milk and that of a more natural quality from eating grass, and from the sty getting sweet during their absence.

In winter turn them into the corn stack yard having a lad to attend them, so that they may eat up any corn which may have been dropped at getting in the corn into the barns: by so doing the young pigs get hardened, and the sty gets sweetened, and is much more healthy. The hogs of this breed are spotted black and white, or rather of a reddish or sandy colour, their hair being long and sometimes curled; the best kind have very few or no bristles, the fewer the better, this being a strong indication of their aptitude to fatten. There is another kind of hogs in this county, called the Suffolk, which are not spotted, but are black and white and may be termed sheet pigs, being in general black at both ends, and white in the middle; they are quick growers and good fatteners; the hair of those of the best kind being long and very thinly set, they are much smaller in size than the first mentioned; having thin rinds they make good pork and bacon, but are not equal to the others, and ought only to be bred where it is intended to keep them to be only nine or twelve months old; they are naturally more prolific than the Berkshire.

There are a few of another kind of pigs kept in this county, called the Norfolk, but they are not of the best kind of that breed; this breed is of a white colour and are of the Chinese kind, being remarkably quick feeders, and when of the best sort I know of none which are equal to them as *porkers*, as they will sell for more per lb. in the London market as pork than any others; they have very fine thin rinds and but little hair upon them, they are tenderer and less prolific than either of the two before mentioned breeds, and are nothing equal to them for *bacon*, having an *over proportion of fat to the lean* when made fat for bacon. The Berkshire, or what is by some called the Leicestershire hogs, excel all others for bacon, as they have more lean, their backs being remarkably broad, and having much flesh on the chine, both within and without, causes them to have much more lean in stripes along the sides, or what are called flitches when cured and made into bacon, and by the lean being thus intermixed with the fat, the bacon when properly cured, has a sort of bright cherry appearance, the fat of it even being as bright and clear as chrystal, and when boiled will run a sort of red gravy much more than any other kind of pigs I have seen: indeed it is always found that large animals of all descriptions are better for salting than small ones are.

There are very few pigs which will pay for any thing which is to be bought for feeding them, or which can be sold,

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sold, which shews plainly that pigs ought to be bred of a kind that will live upon all refuse or waste stuff, and the Berkshire will do this, they must therefore be preferable. In my English Farming in Ireland it may be seen that a hog of this breed gained $2\frac{1}{2}$lb. per day for 104 days; those pigs when raised with care, and not *stinted* at an *early age*, will weigh when thirteen or fourteen months old, forty stone, 14lb. to the stone, and when two years old from fifty to sixty stone.

It may be just necessary to observe, ere I leave this subject, that no animal will pay the breeder when starved *while young*; great attention is therefore necessary to all animals as well as hogs, when at an early age.

SECT. VI.—RABBITS.

THESE are not raised for profit in this county, except by one gentleman who practised it with great success, selling them at 18*s*. per dozen, although tame ones might be raised to advantage, greater part of their food being weeds, such as dandelion, sow thistles, &c. and the dung is found to be very valuable, as may be seen in the report of Buckinghamshire, great numbers being raised about Aylesbury in that county. There are no warrens in this county, nor did I see any land proper for that purpose; indeed it is universally much too valuable for other purposes to be thus applied. There are some wild rabbits in Warboys wood, and in some other parts of the county.

SECT.

SECT. VII.—POULTRY.

TURKIES, geese, fowls and ducks, are not much raised in this county with a view to profit, but are chiefly raised for individual conveniency. Turkies might be raised to a profit, by the *lower classes of society* in the way they do in Ireland, where they feed the young turkies on sharp nettles, shred with a small quantity of oatmeal and milk mixed among them, which is not only a cheap food, but much better than any other food, as young turkies require something hot; pepper has been generally used in England, but nettles are a more natural food, keeping them more healthy than *foreign* aid, and being a weed of a very noxious nature, I strongly recommend this practice of thus raising turkies, as I know no animal which brings so quick and so great a profit, their first cost considered; as the population of London is so rapidly increasing, there is no fear of a market, and as this county is within reach of that market, and *small fowls* being sold at from 3*s.* 6*d.* to 7*s.* a piece, ducks 3*s.* 6*d.* to 4*s.* 6*d.* a piece, geese 5*s.* to 9*s.*; it is highly worthy the attention of labourers, cottagers, &c. in this county, to raise them as well as turkies. With respect to turkies, the black, or the copper coloured, is still more preferable, being larger and harder than any other, a turkey of the size to which the latter will arrive, selling at 15*s.* in the London markets; an old turkey may be calculated to produce twelve young ones, taking them at 12*s.* a piece, supposing that to be the country price, that would be 7*l.* 4*s.* then as they often raise two *cletches* in a year, supposing the last to be ten young ones at 7*s.* 6*d.* each, would produce the further sum 3*l.* 15*s.* which being added to the former makes 10*l.* 19*s.* which is a sum worthy of attention. In Ireland these sort of turkies can only be estimated to the breeders at 1*s.* 6*d.* a piece in expenses; and as the lower order of people in that country, who are assiduous and attentive to them, find it to answer their purpose, and as I always wish to add to the comforts of that deserving class of men and women, *good servants*, I have been induced to make these remarks, hoping it might tend that way.

SECT. VIII.—PIGEONS.

THERE are 271 dove cotes in this county, there being dove-houses in three-fourths of the parishes, many having from six to ten, and one having twelve cotes; but generally running from two to four in each parish; they are found to be extremely serviceable in picking up seeds of weeds, &c. in the winter, and are a very encourageable species of fowls, as it has been proved in Nottinghamshire, where the farmers fearing that they were injurious agreed to destroy them, but they soon found their error, and now give every encouragement to them.

SECT. IX.—BEES.

THERE are fifty stocks or hives kept at Brampton in this county, at Doddington twenty, and Easton thirty, and in a few others from ten to twenty hives, but there are but few kept in the county; the increase of them would be highly commendable, as they cost but little attention, and there is always a good and urgent market for honey and wax, and they would very materially assist the lower orders of people in procuring their necessary winter comforts.

CHAP. XV.

RURAL ECONOMY.

SECT. I.—PRICES OF LABOUR, &c.

Abbotesley, 12s. per week in winter, and 3l. with board in harvest.

Alconbury, 12s. per week in winter, and 15s. in summer.

Alwalton, 12s. per week in winter, and 15s. in summer.

Barham, 12s. per week in winter, and 15s. in summer.

Bluntisham, 12s. per week in winter, and 18s. in summer.

Brampton, 12s. all the year.

Brington, 10s. in winter, and 3l. for the harvest.

Broughton, 12s in winter, and 15s. in summer.

Buckden, 10s. in winter, 12s. in summer.

Buckworth, 10s. 6d. in winter, and 18s. in summer; hours of working in summer from sun to sun, and in winter from light to dark.

Bury, 10s. 6d. in winter, 12s. in summer.

Bythorne, 10s. 6d. in winter, and 12s. in summer.

Caldecot, 12s. in winter, and 15s. in summer.

Catworth, 9s. in winter, 10s. in summer; very few hired servants in this parish.

Chesterton, 12s. in winter, 15s. in summer.

Coln, 12s. in winter, 18s. in winter.

Conington, 12s. summer and winter; shepherds are the only yearly servants.

Covington, 9s. in winter, 10s. in summer.

Denton, 12s. in winter, 2l. 12s. 6d. for the harvest month.

Doddington, 9s. in winter, and 10s. in summer; very few yearly servants.

Easton, 9s. in winter, and 12s. in summer.

Elton, from 10s. to 12s. in winter, 15s. in hay time, and 30s. in harvest.

Ellington, 12s. in winter, and 15s. in summer.

Everton, 12s. winter and summer.

Eynsbury, 10s. winter and summer, and for one month in summer 11s. per week.

Farcet, 12s. in winter, and 18s. in summer.

Fenny Stanton, 12s. winter and summer.

Fletton, 12s. winter and summer.

Folkesworth, 12s. in winter, and 15s. in summer.

Gidding Magna, 12s. in winter, and 15s. in summer.

Gidding Parva, 12s. in winter, and 18s. in summer.

Glatton, 12s. summer and winter.

Godmanchester, 12s. in winter, and 15s. in summer.

Graffham, 12s. in winter, and 15s. in summer.

Graveley, 10s. in winter, and 12s. in summer.

Gransdon, 10s. in winter, and 10s. to 12s. yearly servants, boys to go to plough six guineas, men twelve guineas, women 2l. 10s. to 5l. 5s.

Haddon, 12s. in winter, and 18s. in harvest and board.

Haile Weston, 12s. in winter and summer, women 8d. per day, very few yearly servants.

Hamerton, 12s. per week all the year.

Hartford, 12s. in winter, and 18s. in summer.

Hemingford Grey, 12s. through the whole year.

Hemingford Abbots, 12s. in winter, and 14s. in summer, and beer.

Hilton, 12s. in winter, and 15s. in summer, and beer.

Holme, 12s. in winter, and 18s. in summer, and beer.

Houghton, 12s. in winter, and 18s. in summer, and beer.

Huntingdon, 12s. per week the whole year.

Keystone, 10s. per week the whole year.

Kimbolton, 9s. in winter, and 10s. in summer.

Leighton Bromeswold, 10s. in winter, and 3l. for harvest.

Long Stow, from 9s. to 10s. winter and summer.

Luddington, 10s. in winter, and 15s. in summer; from 3l. to 4l. for harvest.

Lutton, 12s. in winter, and 18s. in summer; and three pints of beer daily.

Molesworth, 12s. all the year; a great many yearly servants.

Morborn, 12s. in winter, and 15s. in summer.

Needingworth cum Holywell, 12s. in winter, and 15s. in summer.

Offord Cluny, 12s. in winter, and 15s. in summer.

Offord D'Arcy, 10s. in winter, and 12s. in summer.

Old Hurst, 12s. and milk and small beer in winter, and 18s. and milk and small beer in summer; yearly servants 10l. or 12l.

Old Weston, 10s. in winter, and 10s. and bread in summer.

Overton Longville, 12s. in winter, and 15s. to 18s. in summer.

Overton Waterville, 12s. in winter, and 15s. in summer.

Papworth, 12s. in winter, and s5s. in summer.

Paxton Magna, 10s. in winter, and 3l. 10s. for harvest; servant boy 4l. men 12l. women 3l. 10s. to 5l. per year.

Paxton Parva, 10s. in winter, and 13s. in summer.

Perry, 10s. in winter, and 12s. to 15s. in summer; 50s. for harvest.

Pidley, 12s. milk and small beer in winter, and 18s. milk and small beer in summer.

Ramsey, 12s. in winter, and 15s. in summer; yearly servants, men 12l. boys 6l. women from 4l. to 8l.

Raveley Magna, 12s. to 18s. per week, former in winter, the latter in summer.

Ripton Parva, 12s. in winter, and 18s. in summer.

Ripton Abbots and Regis, 12s. in winter, and 18s. in summer.

Sawtry St Andrew's and St. Judith, 12s. in winter, and 18s. in summer.

St. Neot's, 10s. per week all the year, except harvest three guineas and victuals.

St. Ive's, 12s. in winter, and 15s. in summer.

Somersham, 12s. in winter, and 15s. in summer; and two pints of beer, 17s. per week, and meat and drink in harvest.

Southoe, 12s. per week, three guineas for harvest, yearly servants, boys 4l. men 10l. women 2l. 10s. to. 6l.

Spaldwick, 12s. in winter, 15s. in summer.

Standground and Stebbington, 12s. in winter, and 15s. in summer.

Steeple Gidding, 12s. all the year.

Stewkley Magna, 12s. in winter, and 18s. in summer.

Stewkley Parva, 10s. 6d. in winter, and 18s. in summer; yearly servants, men 16l. boys 4l.

Stilton, 12s. in winter, and 18s. in summer.

Stoughton, 10s. in winter, and 12s. in summer; 3l. for harvest.

Swineshead, from 9s. to 10s. all the year.

Thurning, 10s. in winter, and 10s. 6d. in summer; harvest 3l. 13s. 6d. to 4l.

Upton, from 9s. to 10s. all the year.

Upwood, 12s. in winter, and 18s. in summer.

Warsley, 9s. in winter, and 12s. in summer.

Warboys, 12s. in winter, and 15s. in summer.

Water Newton, 10s. in winter, and 12s. in summer; 15s. in harvest.

Wistow, 12s. all the year; harvest 3l. or 3l. 3s.

Winwick, 12s. all the year; yearly servants, men 12l. to 16l. boys 4l.

Witton, 15s. in winter, and 20s. in summer.

Woodstone, 12s. all the year, but harvest, which is 15s. per week.

Wood Walton, 12s. all the year.

Wood Hurst, 12s. in winter, and 15s. in summer.

Wooley, 12s. in winter, and 15s. in summer.

Yaxley, 12s. in winter, and 15s. in summer.

Yelling, 10s. in winter, and 12s. and beer in summer; with a breakfast of bread and milk which they value at about two-pence.

The above accounts give an average of the weekly wages being at about 11*s.* 3*d.* in winter and 13*s.* 8*d.* in summer, exclusive of meat and drink, which are given in some places, and of the harvest months, in respect to which there is a great deal of difference in some parishes.

They work from light to dark in winter, and from six to six in the spring and summer months (except harvest when they work from light till dark). The poor in general have dwellings suited to their station; and as almost every one of them may grow his own potatoes and have constant employment if he pleases, they are naturally as little disposed to emigrate from Huntingdonshire, as from any other county.

Piece work.

2s. per load of five bushels for thrashing wheat; 2s. 6d. per quarter for thrashing barley; 1s. 4d. to 1s. 8d. for thrashing beans, &c.; 3s. per acre for mowing hay, &c. in some parts from 3s. to 3s. 6d. is given for thrashing wheat per quarter; from 1s. 7d. to 1s. 10d. and 2s. 7d. for shocking and raking barley and beans; reaping oats in the fens from 10s. to 12s. being done by the hock. Oats weeding in the fens from 8s. to 10s. per acre; raping cole-seed per acre by the hook 8s. per acre; thrashing cole-seed per last 90*s*. puddling 3s. per pole; underdraining 3s. for twenty-two yards.

SECT. II.—PRICE OF PROVISIONS.

Chesterton. Beef sold at 7½d. per lb. Mutton, at 7d. per lb. Veal and lamb at 8d.

Huntingdon. Beef, 8s. per stone. Mutton, 8s. per stone. Lamb, 11s. 8d. per stone. Veal, 10s. 6d. per stone. Pork, 9s. per stone, all of 14lb. to the stone.

St. Neot's. Beef and mutton, 8d. per lb. Lamb, 10d. per lb. Pork, 9d. per lb. large pork for bacon 10d. per lb. wheat for bread 10s. per bushel. Bread, 11d. the quartern loaf.

It may be observed generally speaking, that butchers' meat is generally 1d or 1½d. per lb. under the London markets; and that bread is nearly as high as it is in London; cheese, 7d. per lb. butter, 1s. 2d. per lb. eggs, 10d. per score; milk, 1d. per pint; cabbages, 1d. each; potatoes, 4½d. per peck; turnips, 4d. per peck; pease, 6d. per peck; beans, 4d. per peck; fowls, 4s. 6d. per couple; ducks, 3s. per couple; geese, 5s. each; turkey, 7s.

SECT. III.—FUEL.

THE fuel used in this county consists of wood, coals, and turf; nearly one-half of the parishes using the latter, but they generally use wood and coals also, though in some of them very little coal is consumed. The price of coals being from 14*d.* to 15*d.* 16*d.* 18*d.* and 20*d.* per bushel; at Huntingdon coals were sold at 14*d.* at Eynsbury from 15*d.* to 18*d.* at St. Neot's 15*d.* At Gransdon, from 18*d.* to 20*d.* all per bushel; turf is sold at from 12*s.* to 16*s.* per thousand. Black peats, or black peat earth, sold at 14*s.* per thousand at Wistow.

In the county of Huntingdon coal is principally burnt in the better kind of houses, but common faggots, black oak, turf, &c. and turf and wood, in most farmer's kitchens and offices, and in cottages among the lower classes, stubble, bean straw, reed, dried dung, &c. But as wood is growing scarce, and turf advancing in price, and coals very dear, every possible exertion therefore should be made to find a coalmine, which there is some reason to hope may be discovered in Somersham heath.

CHAP. XVI.

POLITICAL ECONOMY.

CIRCUMSTANCES DEPENDENT ON LEGISLATIVE AUTHORITY.

SECT. I.—ROADS.

ABBOTESLEY. Roads bad, the statute duty not being regularly done.

Alconbury. The turnpike good, but private roads are but middling.

Alwalton. The turnpike good, but private roads are but middling.

Barham. Roads very bad.

Bluntisham. Roads very good, *being well planned.*

Brampton. Roads very good.

Brington. Roads intolerably bad.

Broughton. Roads bad, *being not well formed.*

Buckden. Roads exceedingly good.

Buckworth. Roads middling.

Bury. Roads bad.

Bythorne. Roads good, there being two turnpikes through the parish.

Catworth. Roads good, there being two turnpikes through the parish.

Caldecot. Roads very bad.

Chesterton. Roads very good, turnpike through the parish.

Conington. Tolerably good.

Coln. Roads good; if the high road were extended from this place and Bluntisham to Haddenham in the Isle of Ely, it would be a very great improvement to both Huntingdonshire and Cambridgeshire.

Covington. Good roads.

Denton. Roads bad, the statute duty not being done.

Doddington. Roads very good.

Easton. Turnpike very good, private roads middling. Statute duty irregular.

Elton. Very good roads.

Ellington. Turnpike very good, private roads middling. Statute duty done regularly.

Everton. Roads very bad, though the statute duty is done.

Eynsbury. Roads very good.

Farcet. Roads middling.

Fenny Stanton. Roads middling.

Fletton. Very good roads, a turnpike through the parish.

Folkesworth. Roads middling, and are improving.

Gidding Magna and Glatton. Roads middling.

Gidding Parva. Roads very bad.

Godmanchester. Roads very good.

Graveley. Roads not good, but they are improving; statute duty irregularly done.

Graffham. Roads are very bad.

Gransdon. Turnpike road very good, private roads very bad, statute duty very regularly done; they have ten miles to go for gravel for roads.

Haddon. Roads very bad.

Haile Weston. Roads very good.

Hartford and Hamerton. Roads good.

Hemingford Grey, Abbots, and Hilton. Roads very good.

Holme. Very bad, statute duty not done.

Houghton and Huntingdon. Roads very good.

Keystone. Roads very bad.

Kimbolton. Roads very good; statute duty done.

Leighton Bromeswold. Roads very good; turnpike through part of the parish.

Long Stow. Roads middling good.

Luddington and Lutton. Roads very bad; statute duty done irregularly.

Molesworth. Turnpike very good, private roads very bad.

Morborn. Very bad, statute duty not done.

Needingworth, Offord Cluny, Offord D'Arcy, and Old Hurst. Very good roads.

Old Weston. Roads very bad.

Overton Longville and Waterville. Turnpikes very good.

Papworth. Roads good, the statute duty done regularly.

Paxton Magna. Roads very bad, statute duty done, and a 6d. assessment.

Paxton Parva. Roads very good.

Perry. Roads very bad, though the statute duty is done.

Pidley and Ramsey. Very good roads.

Raveley Magna and Parva. Roads very bad.

Ripton Abbots and Regis. Roads very bad, drains and hedges being much neglected.

Sawtry St. Andrew's and St. Judith. Turnpike good, private roads very bad.

St. Ives and St. Neot's. Roads very good.

Somersham. Roads very good, a turnpike through the parish.

Southoe. Roads good, statute duty done.

Spaldwick and Stebbington. Roads very good, turnpikes through the parishes.

Standground and Stewkley Magna. Roads very good.

Steeple Gidding. Roads very bad.

Stewkley Parva. Roads good, turnpike through the parish, statute duty done very regularly.

Stilton. Turnpike good, private roads very bad.

Stoughton. Roads middling; statute duty done regularly.

Swineshead. Roads good.

Thurning. Roads bad.

Tosland. Roads very bad, statute duty done regularly.

Upton. Turnpike roads very good, private roads very bad.

Upwood. Roads very good.

Warsley. Turnpike very good, private roads very bad.

Warboys. Roads very bad, and very badly formed.

Water Newton. Roads very good.

Wistow. Roads middling.

Winwick. Roads very bad.

Witton and Woodstone. Roads very bad.

Wood Walton. Roads very bad, and *very expensive*, the state of them being very much neglected by those who ought to look after them, there being no drains dressed out, nor the hedges

cut,

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cut, though both want it very much, all the way between this place and Huntingdon.

Wood Hurst. Roads tolerably good.

Wooley. Roads bad.

Yaxley. Turnpike good, except some small places, other roads very indifferent.

Yelling. Roads very bad, statute duty done regular.

From the above account the state of the roads may be seen in every parish in this county, which it may be observed is frequently given as *very good or very bad*, which is indeed very much the case. There being many turnpikes in this county, they are generally speaking very good and well formed; materials are very scarce in many parts, which has occasioned a power to be given (as I am informed) to the commissioners, to pick off, all the stones that can be found on any of the farmers lands; these stones from their being of so hard a nature, and having *no dirt* among them make very good roads, which are certainly very desirable; but the farmers complain very heavily of the great injury done them by such a proceeding. Now though at Gransdon they have to go ten miles for gravel for the use of the roads, yet I am certain that even this, or were it *further*, is much better than having the stones picked off the land, being confident that the farmers do not complain without the greatest reason; for certain it is, it would be almost impossible to do many of them a *greater injury* than what is done by thus picking off those stones from the clay soils, where, could they be procured, *many more are wanted*. By this practice not only the present crops are injured, but as it is practiced yearly, or as often as there are any stones to be seen,each successive crop gets worse injured, and must terminate in great loss to the land-owner,tenantry, and community at large if persisted in.

I am far from thinking that it was considered at that time what great benefit those stones were to the farmer, or that they added to the *fertility* of those clay soils, as I believe it has not been long known that this was the case; stones are valuable, if not too large, on all soils, particularly on clay, whether in grass or tillage, but especially on the latter (i. e. *tillage*); and as I am convinced a more rapid improvement could not be effected on such soils, than by burning clay to the consistency of brick, others having it broken and spread on the land, would it not then be very hard if an act of parliament should be obtained to take away that substance because it would benefit the roads?

Yet the cases are very nearly similar, the only difference being the expense which the *proprietor* would have been at in procuring the *latter substance*. I cannot think that it ever was intended that the *surface* (of which these stones form so essential a part for the well doing of agriculture) should be taken away. I therefore suspect that the *bowels of the earth* were intended, and as this is represented to me as one of the principal obstacles to improvements in agriculture, and as I am convinced both from experience and observation in this county, that it is founded in justice, I here make mention of it as a thing well worthy the observation of the Honourable Board.

The private roads are very much neglected in many parts of this county; as to roads being convex or concave, I should think none were ever intended to be made in the latter method, but many of these private roads may be so called, never perhaps having had any attempt made at their improvement since the time they were originally laid out, though that might be a century ago; they are really many of them in such a state as no person could scarcely credit, remaining ridge and furrow as they were at first, when laid out, worn into great holes in the middle or at one side, so that all wet must remain upon them, especially as the drains by the sides of the roads have been so neglected, that there is scarcely a vestige or mark of them remaining; the hedges and trees in them also totally overspread the roads, similar to an arbour, so that for want of plashing the hedges, lopping the trees, and cleansing the ditches or drains, the roads never are dry, scarcely either summer or winter; when, were the ditches properly made, the hedges plashed and trees lopped, as is indeed required by law, the improvement would be very great; then, were the roads to be thrown up in the middle, so as to form a *gentle slope on each side*, so that carriages might pass each other without danger, all the road would be usable. I mention this, because sometimes when improvements are *intended* to be made on roads, they are thrown up so *extremely high in the middle*, that there is much danger in carriages passing by each other.

The most proper width for private farm ways appears to be thirty feet; they should be raised from side to side, the middle the highest, in the manner I have just mentioned, proper drains made and kept up on each side of the road; the water would thus readily drain away, and the roads would generally be kept dry; thus many of those roads being but little used, would even without gravel, &c. be much more comfortable and good than they now are, especially as there is such a plentiful supply of wood in the hedges on each side to make into faggots; was the road where there are swamps or hollow places properly faggotted, the cart wheels could not cut lower than the faggots, and care being taken to keep the ruts, &c. well filled in, or in fact keeping the road in its original state, the roads would be kept always good.

It is within the *memory* of man, since the road from

Huntingdon to Cambridge was in so bad a state, that the sixteen miles were a day's journey in winter for a horseman, but it is now, from having been well faggotted and covered with gravel, one of the best pieces of road in the kingdom; it is therefore somewhat surprizing that, with such an example, they have not pursued the plan I here recommend, which I do not think they would in the long run find more expensive than at present, for although it may seem a saving to let roads remain in their present state, yet when it is considered, what a difference it would make in the leading dung, carrying produce to market, in the wear and tear of carriages, harness, &c. the great delay occasioned by the badness of the roads, and indeed to the force required in horses, which are often *materially damaged,* they would be amply compensated for the additional expense attendant upon properly formed roads. When these private roads are made forty feet in width, and are little used, it is general to make what is called a twenty feet rampart in the middle, which is frequently raised so high, that it has more the appearance of a bank than a road; and only at first about six or eight feet usable out of the forty, arising principally from forty feet being unnecessary for their purpose, and therefore they will not be at the expense of making *the whole* into a good and sufficient roadway.

In a little time there is a hollow made by the horses which draw the carriages, and two deep ruts, from their being obliged to always continue in one track; it then becomes absolutely dangerous even for a horseman to get out of the way, and if two carriages meet, especially if loaded ones, it is next to impossible for them to pass each other without one or both being overthrown, or indeed, from the extreme depth of the ruts, to attempt passing. When a chaise and pair has the *misfortune* to have to go along

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along such roads, there being no room for the horses to quarter, they go first slipping into one rut and then into the other, so that the animals are tossed and thrown about in such a manner, as to be in the greatest danger of falling every step, and the passenger's situation is more easily to be conceived than described.

I have frequently heard the post-boys say that they have often had their chaise so mired in the roads, as to be compelled to leave it, and get some farmer's team to draw it out, the passengers having to walk. When a single-horse chaise goes along such roads, the horse then *walks* in the middle, and the wheels go along the ruts; so it goes jolting and rolling like a ship on a rough sea, and in danger of being broken, from the weight being first thrown on one side, and then the other; the people being compelled to get out and walk, as from the deepness of the ruts, the carriage is frequently as much as the horse can draw, and it is often the case that the body of the chaise drags on the middle of the road. The form of such roads is therefore, as nearly as it can be described, as follows: a high bank in the middle, a hollow in the middle of that, two deep ruts, and what may be termed very properly ditches on each side of them, and then two high narrow ridges on each side of the road, with a ditch nearly filled up on each side of them, so that there is no way for the water to get off, and then the trees and hedges completely overhang or nearly so, the whole of these strangely formed roads. Even where some attempt is made at repairing the roads, the materials for that purpose are often laid in the ruts, unbroken if stone, the middle or horse's path being left quite hollow, probably twelve inches deep or more; so that a real reservoir is formed for holding or keeping up the water, and notwithstanding its being laid so high, it must be always wet and soft. Now were the roads to be made as I before described, with an easy slope, if the middle part were repaired during spring, as there would be *two* pleasant roads on each side during summer, the middle would get properly settled and in good order against winter; thus there would be good roads at all seasons.

SECT. I.—CANALS.

The beneficial effects of one are very sensibly felt at Ramsey, by which they convey their corn and other commodities to market, and receive timber,&c. in return, which is certainly highly advantageous, and promotes the purposes of agriculture very much, by keeping their horses at liberty for such purposes.

Should the plan that has long been in contemplation, ever be carried into effect, to join the Cam to the Ware river, it would be of infinite advantage to this and adjoining counties, and also to the metropolis; as it would procure an inland navigation from London to Lynn and all the Bedford level. Thus also, the immense produce of the fens, might be conveyed cheaper to London, and all weighty articles brought from that grand emporium, by inland navigation, to all the extensive Bedford level and the bordering towns. In times of war, likewise, should privateers swarm on our coasts, such an inland navigation must be of the greatest national importance.

SECT. II.—FAIRS AND MARKETS.

ALCONBURY. Has a fair on the 24th of June, for pedlar's ware.

Bluntisham cum Erith. Fairs for cattle of all sorts on the 4th of May, 25th of July, and 1st of November.

Godmanchester. Fair for all sorts of cattle on Easter Tuesday.

Huntingdon. Fair on the 25th of March for pedlar's ware; market weekly on Saturday for corn, &c.

Kimbolton. Fairs for cattle, pigs, &c. on the 11th of December, and St Andrew's day, with fairs also at Easter, Whitsuntide, and Michaelmas, which are chiefly what are termed pleasure fairs; market weekly on Friday for butter, butcher's meat, barley, malt, &c.

Leighton Bromeswold. Fairs on the 12th of May, and 5th of October, for all sorts of cattle, and a statute for hiring servants on the 1st of August.

Ramsey. Fair on the 22d of July for pedlar's ware, &c. Market weekly on Saturday.

St. Ive's. Fairs on Whitsun Monday, and on the 5th of October, for all sorts of cattle, &c. and cheese; market weekly on Monday for cattle, corn, &c.

St. Neot's. Fairs on the Saturday before the third Tuesday in January, old stile, for a shew of horses and other cattle, toll free; and on Ascension day, Corpus Christi Thursday, on the 13th of June, and on the 17th of December, for cattle of all sorts; market weekly on Thursdays for corn and provisions.

Somersham. Fairs on the 23d of June, and 15th of November, chiefly for pleasure. Market weekly on Fridays, not much attended.

Spaldwick. Fair on Wednesday before Whitsunday for all sorts of cattle.

Yaxley. Fair on Ascension Thursday for horses and sheep.

SECT.

SECT. III.—WEIGHTS AND MEASURES.

A load of wheat is five bushels.

The common weights used in this county for agricultural and grocery articles are, the common avoirdupois weight of sixteen drams to the ounce, sixteen ounces to the pound, and twenty-eight pounds to the quarter, and four quarters to the hundred weight.

Fleece wool is sold by the todd of twenty-eight pounds; all sorted wool, or as it is termed here broke wool, is sold by the pack of two hundred and forty pounds weight.

When Leicester cheese is sold in the markets of this county by the hundred, there are one hundred and twenty pounds to the hundred.

Respecting measures, the Winchester bushel of eight gallons, is the common bushel that all grain and seeds, &c. are measured by in this county, or the coom containing four bushels; or load containing five bushels, or the quarter containing eight bushels, or last containing twenty-one cooms, or eighty-four bushels.

SECT. IV.—MANUFACTURES.

THERE is a manufactory at Kimbolton for lace; poor rates increased. At St.Neot's, a very large paper mill worked by patent machinery. At Standground, two very large manufactories for sacking. And Stilton is famous for the cheese of that name, which it seems came into such repute from the following circumstance. Thornhill, who rode the great match, going to London, returning to Stilton, and then

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then going to London again, having as many horses as he pleased, within some minutes of twelve hours, being a distance of 213 miles, lived at the Bell at Stilton; from his celebrity he had many customers, who used to buy this cheese of him; having a much greater demand than Stilton could afford, he removed into Leicestershire, having some relatives there, and instructed them in the art of making it, and greater part of the cheese so called still comes from that county. But the cheese, as has been already observed, was originally made at Stilton.

On the subject of manufactures, Mr. Maxwell justly observes. " There are no manufactures carried on in the county, except the brewery (and that not for exportation), together with a little wool-stapling, but the women and children (at least such of them as are able to work), may have constant employment in spinning yarn, which is put out by the generality of the country shop-keepers, though at present it is but a very indifferent means of employment and they always prefer out of doors work when the season comes on."

There should be more hemp and flax cultivated in this county, for which the soil in many parts is remarkably well adapted; and then it would be prudent to establish various linen manufactures. In process of time also, other manufactures may be established, especially as the county is rapidly improving, and has such valuable navigable rivers and other advantages for manufactures.

SECT. V.—COMMERCE.

WHEREVER there is a good opportunity of judging, this is universally allowed to have the most beneficial effects to agriculture in this county.

SECT.

SECT. VI.—POOR.

At Kimbolton there is a society for bettering the condition of the poor. Workhouses are farmed at Coln and Somersham, at the former at 2s. per head, per week; and at the latter at 2s. 6d. per head, per week. Box clubs are much approved, and therefore encouraged. At Yaxley, the rates are much advanced from the great number of bastard children got by the soldiers lying in the barracks there.

In about one-third of the parishes they have neither increased nor decreased, the other part of them they have increased in a larger or smaller degree. At Holme, which is an enclosed parish, they have decreased.

SECT. VII.—POPULATION,

Is in general increasing in this county, there being only one instance to the contrary in all my inquiries in the different parishes.

The following account of births, burials, and marriages is taken from the returns made in the year 1800 under the population act.

Years.	Baptisms.			Burials.			Marriages.			
	Males	Females.	Total.	Males	Females.	Total.	Years.	Number.	Years.	Number.
1700	546	485	1031	371	387	758	1754	248	1777	329
10	434	413	847	430	445	875	5	310	8	321
20	384	457	841	609	650	1259	6	327	9	329
30	512	430	912	616	597	1213	7	266	1780	283
40	472	442	914	475	465	910	8	266	1	304
50	468	496	964	437	446	883	9	298	2	299
60	533	491	1024	462	456	918	1760	315	3	331
70	514	462	976	477	513	990	1	307	4	362
80	513	491	1001	667	679	1346	2	314	5	384
1	446	518	964	804	799	1603	3	318	6	393
2	472	421	893	693	681	1374	4	340	7	336
3	462	475	937	666	684	1350	5	293	8	318
4	457	437	894	600	635	1235	6	289	9	302
5	574	529	1103	453	427	880	7	261	1790	337
6	580	509	1089	493	472	965	8	306	1	301
7	580	524	1104	400	392	792	9	302	2	353
8	579	563	1133	443	435	878	1770	375	3	296
9	570	554	1129	416	404	820	1	325	4	352
1790	621	564	1185	422	454	876	2	275	5	293
1	580	530	1110	396	402	798	3	284	6	343
2	585	598	1183	404	390	794	4	295	7	391
3	568	529	1097	460	473	933	5	372	8	395
4	510	539	1079	389	399	788	6	334	9	362
5	521	499	1020	431	402	833			1800	321
6	551	523	1074	346	336	682				
7	596	598	1194	505	488	993		Average		318
8	646	579	1225	428	387	815				
9	61[illegible]	567	1191	417	375	792				
1800	536	547	1083	402	399	801				
Average			1049	Average		971				

The above account only yields an average increase of seventy-one which will be seen to be owing to the heavy mortality of 1781 to 4, since which it will be observed there is an increase annually, which coincides with the result of my inquiries.

The following table, exhibiting at one view the number of inhabitants, male and female, with their several occupations, is extracted from the returns made in 1800, under the population act.

Hundreds.	Persons.		Occupations.			
	Males.	Females.	Agriculture.	Trade, &c.	Others.	Total.
Hurstingstone	5699	5745	2729	1299	6505	11,444
Leightonstone	3577	3669	2194	529	4523	7246
Norman Cross	3367	3435	2218	797	2586	6802
Toseland	4885	5156	2389	980	6575	10,041
Huntingdon Town	993	1042	6	879	376	2035
Totals	18,521	19,047	9536	4484	20,565	37,568

SECT. VIII.—FOOD AND MODE OF LIVING.

SERVANTS live very well in this county, pork and dumplings, or puddings and potatoes being the food of three-fourths of the parishes; with milk pottage, or milk and bread for breakfast, and in the harvest in many of these they are allowed mutton, beef, &c. in the remainder of the parishes they are kept on beef, mutton, pork, bacon, dumplings and puddings, have milk, &c. as in the others for breakfast.

CHAP.

CHAP. XVIII.

OBSTACLES TO IMPROVEMENT.

SLUGS, wire-worm, grub, &c. for the means of preventing and destroying which, see Chap. IV. under head Expenses and Profits, and Chap. VII. Tillage. Rooks are very much encouraged in many parts of this county as a means of destroying great numbers, see Chap. X. Sowing late is also reckoned a means of prevention to their ravages.

It will be seen under head Roads, Chap. XVI. that I have there particularly mentioned the picking off stones from the land as a very principal obstacle to improvement.

SECT. I.—MISCELLANEOUS ARTICLES.

Agricultural Societies. There is one established at Kimbolton, and the following premiums are offered.

	£.	s.	d.
For the best one shear ram -	2	2	0
Second best shear ram - -	1	1	0
For the best two shear ram - -	3	3	0
Second best shear ram - -	2	2	0
For the best theave - -	3	3	0
Second best theave - -	2	2	0
For the best pen of five theaves -	3	3	0
For the best one shear wether -	2	2	0
Second best one shear wether - -	1	1	0
For the best pen of five wether lamb hogs which shall have been fed on hay and green food only .	3	3	0

	£.	s.	d.
For the best pen of five ewe lamb hogs, ditto	3	3	0
For the best two shear weather, ditto	3	3	0
For the second best shear wether, ditto	2	2	0
For the best two shear wether, which shall have been fed in any other way	3	3	0
For the second best, ditto	2	2	0
For the best bull not exceeding eighteen months old	3	3	0
Second best, ditto	2	2	0
For the best heifer not exceeding eighteen months old	3	3	0
Second best, ditto	2	2	0
For the best boar not exceeding eighteen months old	2	2	0
Second best, ditto	1	1	0

No stock to be shown for any premium, unless notice in writing thereof be given to Mr. Day, the Secretary, at least one day previous to the annual meeting. The cattle to be penned as usual, and ready to be shown by eleven o'clock. The premiums will be given to such owners of cattle as were the breeders thereof only, of which as well as of the ages, satisfactory proof must be given to the committee. The rams and theaves, and also the pens of five one shear wethers to be produced for inspection in their wool, and the committee in determining these premiums to take into consideration the wool as well as the carcass: all the other sheep to be produced shorn. The two shear wethers to be killed if the committee shall think fit whether any competition or not. No animals to receive two premiums from this society, except the first class of two shear wethers, which in case any corn fed wethers should be entered to be shown, may be again shown on the same day, for the premiums of that class also.

	£.	s.	d.
To the labourer in husbandry who shall have brought up, or be then bringing up, the largest family without parochial aid	3	3	0
Ditto, next largest ditto	2	2	0

To

	£.	s.	d.
To the servant in husbandry who shall have lived the longest time with one master or mistress, or on the same farm - -	3	3	0
Ditto, next longest, ditto -	2	2	0
To the labourer in husbandry who shall have worked the longest time with one master or on the same farm	3	3	0
Ditto, next longest, ditto -	2	2	0

The candidates for premiums to labourers and servants to deliver their certificates to Mr. Day at the White Lion, Kimbolton, by ten o'clock in the morning of the annual meeting, as no certificate will be received after that hour.

To the following gentlemen in Huntingdonshire, for the great readiness which they shewed in rendering me every assistance in obtaining information respecting the matter contained in the foregoing sheets, I beg leave to return my unfeigned and grateful thanks.

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Alwalton. Sir Richard Hetley, Bart.
Barham. William Ladds, Esq.
Bluntisham cum Erith. Mr. Coxe, and Henry Kent, Esq.
Brampton. Mr. William Pick.
Brington. Mr. Fable.
Broughton. Mr. Robert Mayse.
Buckden. Mr. Henry Cope.
Buckworth. Mr. Nicholls.
Bury. Mr. William Campion.
Bythorne. Mr. John Browning.
Catworth. Neville Tomlinson, Esq.
Caldecot. Mr. Stephen Rowles.
Chesterton. Mr. William Collier.
Coln. Mr. William Chater.

Conington. John Heathcote, Esq.
Covington. Mr. Head.
Denton. Mr. Edward Bellamy.
Doddington. Mr. William Bowyer.
Easton. Mr. W. Whitehead.
Elton. Henry Crofts, Esq.
Ellington. William Ladds, Esq.
Everton. Mr. John Saunderson.
Eynsbury. Samuel Stoughton, Esq.
Farcet. Mr. John Maddison.
Fenny Stanton. Mr. John Hammond.
Fletton. Mr. John Henry, and George Maxwell, Esq.
Folkesworth. Eusebius Francey, Esq.
Gidding Magna. Mr. Hatfield.
Gidding Parva. Mr. R. Blowfield.
Glatton. Mr. Henry Knighton.
Godmanchester. Mr. Robert Vinter, and Mr. Thomas Bightly.
Gravley. Mr. William Cawcutt.
Graffham. William Ladds, Esq.
Gransdon. Mr. John Spring.
Haddon. Mr. John L. Wright.
Haile Weston. A. M. Darnell, Esq.
Hamerton. Mr. Thomas Everett.
Hartford. Mr. William Butt.
Hemingford Grey. Mr. P. Margetts.
Hemingford Abbots. Mr. W. Clarke.
Hilton. Walter Peck, Esq.
Holme. Thomas Wells, Esq.
Houghton. James Blott, Esq.
Huntingdon. Mr. James Butt.
Keystone. Mr. William Pearson.
Kimbolton. Benjamin Welstead, Esq.
Leighton Bromeswold. Benjamin Welstead, Esq.
Long Stow. N. Tomlin, Esq. and Benjamin Welstead, Esq.
Luddington. Mr. Henry Ladds.
Lutton. Mr. John Martin.
Molesworth. Rev. Mr. Ellis.
Morborn. Mr. Francis Earl.

Needingworth. Thomas Howard, Esq.
Offord Cluny. Thomas Sissney, Esq.
Offord D'Arcy. Mr. James Morton.
Old Hurst. Mr. Thomas Goodliffe.
Old Weston. Mr. John Fortsue.
Overton Longville. Mr. John Southwell.
Overton Waterville. Mr. Thomas Sharmen.
Papworth. Mr. Paul Cave.
Paxton Magna. Mr. Payne.
Paxton Parva. Mr. Payne.
Perry. Mr. John Browning.
Pidley. Mr. James Blake.
Ramsey. Samuel Wells, Esq.
Ravley Magna. Richard Pooley, Esq.
Ravley Parva. John Bedford, Esq.
Ripton Abbots. Mr. Samuel Stratton.
Ripton Regis. Mr. Robert Hatfield.
Sawtry St. Andrew's. John Hatfield, Esq. and Rev. Thomas Saunders.
Sawtry St. Judith. John Hatfield, Esq.
St. Neot's. W. A. Peppercorn, Esq.
St. Ive's. Mr. John Mann.
Comersham. Mr. John Ilett.
Southoe. William Wills, Esq.
Spaldwick. Thomas Day, Esq.
Standground. Mr. Robert Warwick.
Stebbington. Mr. James Conington.
Steeple Gidding. J. H. Ladds, Esq.
Stewkley Magna. Mr. Robert Ellis.
Stewkley Parva. John Nicholls, Esq.
Stilton. Mr. John Pitts.
Stoughton. Mr. William Murfin.
Swineshead. Mr. John Islip.
Thurning. Mr. H. Ladds.
Toseland. Mr. Griffin Fletcher.
Upton. John Heathcote, Esq.
Upwood. John Pooley, Esq.
Warsley. Mr. Edward Flinders.
Warboys. Mr. George Farcey.

Water Newton. Mr. John Compton.
Wistow. Mr. Thomas Cooper.
Winwick. Mr. John Peake.
Witton. James Blott, Esq.
Woodstone. Mr. John Wells.
Wood-Walton. Mr. George Briant.
Wood Hurst. Mr. George Ekins.
Wooley. Mr. W. Ladds.
Yaxley. Mr. John Faux.
Yelling. Mr. Thomas Bennett.

SECT. II.—WOODS.

THE woods at Kimbolton are managed in a rotation of sixteen years, making on the average about 16*l*. per acre. From there having been too much timber left in the woods, the underwood has been very much destroyed, and as the latter with the poles, pays much better than the timber, the practice of leaving so much timber in woods is very much condemned at this place. The spinneys pay better than the woods. Land in wood does not pay so much money as it will for agricultural uses; I have before stated that a great quantity of wood has been cut down and grubbed up here, and converted to the use of the plough.

The woods at Leighton Bromeswold are in a fifteen years rotation, paying about 12*l*. per acre for underwood. The oak timber is sold at 2*s*. 6*d*. per foot, bark is sold at a proportion of 7*s*. 6*d*. in the pound on the value of the trees.

SECT. III.—BURN-BAKING.

Mr. Welstead has practised this by cutting up the ant-hills from those pastures of strong clay soils which I have so frequently had occasion to make mention of; he calculates the expense of it to be one shilling for a very large cart-load, and that it is the cheapest manure he can make.

SECT. IV.—DRAINING.

I have, since I wrote the foregoing parts of this report been into Huntingdonshire again, and perceived that the very great neglect of draining in some parts of it, especially on the strong clay pastures, had escaped my attention. The ditches and drains have not been scoured out for many years, so that they are very nearly grown up, and where they have been scoured out, from their being only made two feet wide, and one foot or one and a half deep, they are not effective. The ditches should be made three feet wide and four feet deep, and after the ditch was dug to this depth, if the borer was used, it would prove very beneficial, and would effect a good and effective drainage at a very moderate expense. I am thoroughly convinced of this from what I have lately seen on land exactly similar, where the ditches were made in the manner which I have above described, the borer being applied after, going to the depth of from ten to thirty feet deep, the

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the distance being about four or five hundred yards, in which there were four borings, at equal distances, and at the time I viewed the improvement, the current of water was sufficiently strong to have turned an overshot mill.

This kind of draining would be materially beneficial to these strong sour coarse clays, by keeping them dry in the winter season, which would make the soil warmer, and consequently the plants of all kinds would grow much more luxuriantly; and in summer, if small sluices were made, so as to prevent the water from all draining away, further benefits, by adding proper degrees of moisture in that season, would be the result. It is astonishing what very great advantages some of the Lincolnshire marshes gained by such a proceeding.

SECT. V.—SUNDRIES.

A GOOD oak gate, all heart, with five ledges, four of them being four inches by one and a quarter, and the top ledge being four inches by five inches at the forehead, and four inches by seven inches behind, is to be had in this county for one pound.

Strong hurdles, eight feet in length, and having five ledges, are to be had at from 15*s*. to 16*s*. per dozen.

There is a thrashing machine at Southoe, power four horses, which thrashes when the wheat is good, and the straw short, thirty loads a day, of five bushels; but when the straw is long it thrashes but half that quantity; it is however hard work for the horses.

Shoeing horses 6*d*. per shoe, for a remove 2*d*. for laying a share, 6*d*. for fining a share, 1*s*. 6*d*., for a fallow share, 2*s*., for a coulter, 6*d*.

SECT. VI.—SOWING CORN CROPS.

On my second journey into this county, I found that a very good method of sowing wheat and barley crops is practiced, (viz.) to sow one part of the seed before ploughing, and the other part after harrowing it in. I have long recommended this practice, and was much gratified by seeing it put into effect. Too much praise cannot be bestowed on the farmers who are in the habits of doing it, as the land being from it more regularly occupied, a much greater produce is obtained, and the sample better and more even. It is observed by many farmers in this county, that when *all* the wheat is sown before ploughing, it comes in rows, and though it often appears stronger in the winter season, yet at harvest it has neither so *great a number of ears*, nor are they so *well filled* nor so long as those which are obtained by sowing at twice. They also universally observe that this difference is much more observable in the barley than in the wheat crop. They have become so partial to the method, that they sow clover and small seeds at twice, finding that the seeds are more regularly dispersed, and that the produce amply repays them for their trouble. I earnestly recommend the adoption of this method to all those who have not yet done it, not only for wheat and barley, but for oats on fallow or broken land; and I am very sanguine in my hopes that it will be generally adopted, from there being such a characterizing spirit of improvement in the greater part of the farmers of Huntingdonshire, and I really feel great satisfaction in being thus able to give this tribute to merit, where it is so justly due.

In dibbling beans, a greater advantage is derived from putting two beans in every hole, two stems of beans prospering much better than one, it being observed that where there is but one stem, the hole on the stiff clays remains unfilled with earth, so that when the beans get up, the winds twirl them round, and so chafe the stem that the plants are very frequently quite destroyed, but when there are two stems they fill out the hole, and support each other. Some of the farmers in this county sow beans and tares together, ratherly sowing the beans the thinnest, as two or two bushels and a half of tares, to one bushel of beans; reaping them together for winter food for sheep, and find the practice a good one, as the sheep eat much of the straw along with the corn, and thrive very much upon such fodder; it is found to be very preferable to hay. This is a practice well worth the serious attention of those farmers who reside on stiff clay soils where turnips cannot be advantageously grown; it is generally done on land that is intended for fallow the *next year*, as they cannot be hoed in the present method; but where the land is free from couch, if this crop was sown in drills and ordered otherwise, the land might then be made a complete fallow for either wheat or barley.

The greater part of the farmers in this county, dislike sowing tares on these clay soils, because they leave the soil fouler than any other crop, and as they also leave the land much lighter than other crops, they very seldom have a good crop of wheat after them. I was I own very much surprized in this county, to see a better crop of wheat on an oat stubble than on a pea stubble in one field; but for the reasons given by the farmers against the tare crop, I apprehend that the pease also left the soil lighter than it ought to be for the wheat crop: this plainly shews the necessity of making even these clay soils firm, by treading for the wheat crop. Barley would prosper much better after those crops which have a tendency to leave the soil light.

In dibbling beans on flag or sward land after ploughing, it is found necessary to let the dibbling iron go through the flag, as deep as the plough, so that the water may run underneath the flag, for if it remains in the hole, it often rots the seed beans. The rows are fourteen inches in width and four inches apart, when they intend to hoe the crop.

SECT. VI.—PLANTING.

It will be observed under the head Roads in the foregoing sheets, that I have particularly mentioned the great injury which some of the farmers in this county sustained from having *stones* picked off the land; while I was in the county lately, I was making similar remarks on the subject, to Mr. Welstead, his grace the Duke of Manchester's steward, who made a remark which I think highly deserving of notice, (not only as a corroboration of my former statement, but more especially from planters) as it will show the great necessity of shade in planting. Mr. Welstead's father planted a fruit tree in a court yard, which was paved with pebbles; for this purpose he had a small part of them removed, and dug a very small shallow hole, the earth underneath the pebbles appeared to be of a very poor bad nature, what is termed gault, (which is a *hungry* sour clay). Mr. Welstead remarked, that he then thought the tree could not prosper for want of better mould; the pavement was immediately put down again round the root of the tree, and it has prospered much better, and produced much more fruit, than any other wall fruit-tree about the place. Mr. Welstead is therefore so thoroughly convinced of the advantages derived from paving round the roots of wall fruit trees especially, that he intends to have some of his own, and likewise some of the Duke of Manchester's done in that way. The cause of the benefit received from the abovementioned method is obviously by the sun's being prevented from exhaling the moisture out of the earth at the roots of the trees; and this is the more necessary in wall fruit tree planting, as the sun has more than common heat against such situations. It has been found in America, (where the power of the sun and frost is each in the extreme) that by *thinly planting orchards*, the trees have many of them died at a very early period, never having borne fruit as they ought; while there are many orchards, the trees in which were planted by the British nearer together; which, although now more than one hundred years old, bear very large quantities of fruit, and are in full vigour. The cause of this great difference arises clearly from the trees of the latterly made orchards being planted at great distances, so that their boughs do not afford shade to the ground, from which great numbers of them never come to perfection, and more than half of them die before they have stood twenty years.

SECT. VII.—ROADS.

It is remarked by men of great observation in this county that one load of the stones which are picked from off the land, *by their having been exposed to sun and wind*, are of greater use to the roads than four of the finest gravel or stone, taken from the pits, and *immediately* laid upon the roads. I had observed that these stones were better than others, and thought it arose from *their cleanness*, but I believe that was not entirely the case, there being in many parts of Huntingdonshire very good gravel, which when screened, consists of very little but stones; but even they will not wear like the stones which have been long exposed to sun and wind; this evidently proves that gravel when intended for the use of roads should be thrown up out of the pit, some time before it be laid on the roads, so that all moisture might be exhaled from it, by which means it would become much harder and more durable.

GLOSSARY.

Explanation of a few provincial words used in the county, not to be found in general in English Dictionaries.

Adventurer's Land. Such land as the corporation of the Bedford level have a claim upon for draining the fens, &c. commonly called in the fens ventriss land.

Crane. An engine used in the fens to raise a very heavy lump of wood, and to let it fall upon the top of large piles to drive them into the light fen-earth, where the foundations of brick-buildings are to be erected.

Cole-seed sailing. Carrying, threshing and dressing cole-seed on a cloth in the open fields.

Deep stapled land. Deep soiled land.

Metairs. Æstuarium; the washes at deep water betwixt the boundaries of Norfolk and Lincolnshire, into which the fen waters fall.

APPENDIX.

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APPENDIX.

OBSERVATIONS BY MR. SCOTT ON IMPROVING THE FENS, ON PARING AND BURNING, ON IRRIGATION, AND ON DRAINING THE FENS.

I. On improving the Fens.

THAT all fen-moor is covered with an extremely light and porous soil, and the surface very subject to burn in hot dry weather, needs no proof; because it is well known to every person who has ever seen the fens in a hot dry summer. The soil indeed is much lighter in quality than most sandy soils that are cultivated. But as fen soil is peculiarly productive when properly managed, its crops of grain and grass commonly cover the ground, and keep it cool, before the dry weather sets in; and the richness of the soil causes all crops of grass grown, &c. to recover almost incredibly after rain, where it is not impoverished by exhausting crops of oats, &c. Where the land, however, has been injured by too frequent crops of exhausting grain or other mismanagement, which is almost a general case in the fens, the grain and grass suffer very much in all burning weather, or long dry summer seasons.

There is, however, most excellent clay marl, under the greatest part if not the whole of the Bedford level; and in many parishes in the fen districts, I have seen this valuable rich manure lie close to the fen-moor, that is, within three, four, or five feet of the surface. Every good judge of soil and marling knows well that all light soils that are subject to burn, may be made of more than double their former value, by only marling them in a prudent manner. And it will be admitted as a certain fact, fully proved and established by the experience of ages, that where soils are light, dry, and very subject to burn, and there is good marl in the land, or very near to it, and lying in large quantities near the surface, that the very best mode to improve such land will be to marl it. When the marl is in the land, or very near, and may be easily obtained and carried on the land, marling such soils is much cheaper than carrying any other manure to them, except muck. Indeed where the muck lies at a distance, such lands may often be marled for less expense than the muck can be carried for. And as most fen towns and villages, are erected on the gentle hills that arise in the fertile plain of the Bedford level, and the corn is commonly carried to these towns and villages, the fen-lands in general may be marled at much less expense than they can have the muck carried to them for, from farm-yards situated in those towns and villages.

The fen clay marl, lies under the fens in general near the surface, and is of a soft quality, and may be very easily worked, and even dug up in as large spades full as men can throw into any muck cart, tumbrel, or other carriage. And the marl in general that lies under almost all the fen-surface, is of a very rich soapy nature, and as well adapted for fen soils as any marl in the kingdom.

On the best State of Fen Land for receiving the Marl.

It is common in Shropshire and several other counties, to lay the marl on land that is in a state of fallow for wheat. And in Staffordshire, Norfolk, and other counties, where they make turnip fallows, it is very customary to lay the marl on turnip fallows. And as some fen-farmers now make a fallow of an oat-stubble, and sow it with cole-seed, it would be an excellent plan, first to clean such fallows and burn the rubbish, and then marl them for cole-seed; especially as all sorts of clays suit cole-seed, and the fen dikes are generally pretty free from water at these seasons. But the very best mode of marling all sorts of soils is, to lay the marl on the grass, either while it is grazed, or as soon as it is mown. For where marl is laid on light soils, and ploughed immediately under, or when the land is ploughed and harrowed several times, or for several years together, as the marl is much heavier than the soil, the marl continues to sink lower and lower every time it is stirred with the plough and harrows, and a large portion of it gets too deep, and is literally buried. The chief reason I believe why farmers have so long practised laying marl on lands under fallows is, because they think that they receive the return of their money laid out in marling more speedily, than when in grass land; but if marl were always laid on land that is grazed or mown, a much less quantity of marl would do, and its good effects would be more permanent, the land would be amazingly enriched and cooled, by making it thus, and its too light soil would be made a complete rich loam. Such land would thus be infinitely improved both for grazing and mowing; and afterwards it might be ploughed and sown with any grain, the crops would prove very bulky, and the grain would be much heavier and better in every respect, than the grain used to be before such lands were marled.

It may indeed be fully demonstrated by undisputed facts, that fen marl will improve fen land, both for grass and grain. There are many deep dikes and drains, in most fen parishes, where the clay marl has been thrown out of the bottoms, and is now well mixed with the fen soil. Where the land is consolidated by being mixed with this clay marl, and where such banks are grazed or mown, the finer grasses flourish to astonishment, beyond what they do on the fen soil unmixed; and whenever such banks are ploughed and sown with any sort of grain, the grain is always heavier, and the crops do not fall so soon down to the ground, but stand up much better; and the crops of all sorts of wheat, oats, beans, and hemp, and artificial seeds on such banks are always better than any of the other parts of the land.

Where there is plenty of rich marl on the premises, and it is laid bare in the bottoms of the dikes, as is a general case in most fen parishes, an excellent plan of marling in the fens would be, for one or two men with spades called casting tools, to go into the dikes, and to cast the clay marl out of the bottoms of the dikes, upon the land intended to be marled; and one man at the dike sides to cast the marl over the land as far as he can, which with a casting tool may be thrown to a great distance; and the remainder, when frost sets in or in summer, or after hay harvest, to be carried about with carts, and spread over the land; and thus much fen land might be marled, without spoiling a foot of land, and for only about half the expense that land can be marled for in any other district.

Where a good watering pond is much wanted, as is the case in almost all the fens, a marl pit might be made in the most convenient corner of the land; and as much marl got out of it as is wanted, and thus a permanent watering place might be made, and the land manured at the same time. If the dikes were deepened also, by getting the marl out of the bottoms, it would greatly improve the drainage of the land, and prevent the stock from running through them when nearly dry, at which time the stock are more frequently

quently lost in the dikes, than when the dikes have plenty of water in them; for when they have much water in them, sheep or other stock will seldom go into them; and if one slipped in by any accident when there was plenty of water, the cattle would seldom be smothered in the mud, &c. as they could easily swim in plenty of water, to the watering places where they could get out.

Such deep dikes and deep watering places would also make most valuable and excellent fisheries, and provide plenty of wholesome water for stock all the year; which would prove an unspeakable advantage to every fen estate.

The examples above mentioned where this clay marl is mixed with the light fen moor, fully demonstrate that fen land will not be injured by being mixed with clay marl. And at the same time there are numerous specimens to be seen in almost every fen parish, which fully prove what an incredible improvement it would be to all light dry fen moor soil, if it were mixed with the fine rich fertilizing clay marl, with which the fens abound, in such a surprizing degree.

And shall such rich clay marl, the very best of manures for all light soils, for ever lie dormant and unused over almost the whole of the spacious fertile fens? No! let the members of that valuable institution, whose collective skill in agriculture far excels whatever was combined before, to improve the surface of the globe; who have caused so many branches of husbandry to be brought to a height of perfection unknown to former ages; whose noble exertions have enabled us to surmount the late awful dearths, and whose future efforts will prevent those scarcities, and even famines which must take place, should foreign ports be shut against us. Do you exert your influence to prevail on the landowners of the fens, to cause this great improvement to be commenced; for if taken up

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up with spirit, it cannot fail to prove of incalculable advantage to them and their families, as well as to the nation at large. This is more immediately incumbent on the noble descendant of the illustrious house of Russel, whose patriotic enterprising ancestors, took so active and energetic a part in recovering these fertile fens from their long lost deluged state, in which they had lain during the lapse of many centuries; and who, like his immediate predecessor, as well as more remote ancestors, has already given such ample encouragement to agriculture, and other important national improvement. The princely property of the Russel family in these fens, though now well managed, would by being clay marled, be made of more than double its present value, both to the landlord, the occupiers, and still more to the public, and would soon far excel what it was in the time of William of Malmsbury, who, lavish of its praises, represented Thorney, as "a very paradise, for that in pleasure and delight it resembles heaven itself; the very marshes abounding with trees, whose length without knots, do emulate the stars; the plain there as level as the sea, which with the flourishing of the grass allureth the eye; neither is there any waste place in it, for in some parts thereof there are apple trees, in others vine, which either spread on the ground, or are raised up with poles."

And were I permitted to address the proprietors of the fens in general, I would say, oh! ye fortunate land owners of these fertile fens, enter into this business with spirit; and let not another year pass over, before ye cause some of your fertile fen fields to be marled, and as soon as possible afterwards let them be irrigated; then the spacious Bedford level will become a species of Elysian fields, and perhaps the most productive territory in the universe. By these means, your valuable estates will be improved in a quatriple proportion: the produce of the Bedford level increased at least to the amount of two millions per annum, and in times of scarcity its unparalleled productions will prove of more real value to England, than both the Indies.*

II. On Paring and Burning.

Paring and burning, or ploughing and burning, when practised in a careless manner, and permitted to burn deep holes into the moor, has injured some fen lands. But as this is solely the effect of setting the heaps on fire, when the land is too dry, or neglecting to spread the ashes properly, it is no defect of the system, but entirely the result of mismanagement. Indeed after fen, or other low lands, are well cleaned and laid down with artificial seeds, if the land be burned too frequently, for instance, every five or six years, or is ploughed too deep for burning, namely, three or four inches, it is bad husbandry.

But notwithstanding these abuses of burning, it is my unbiassed opinion, after more than twenty years mature reflection on the effects of ploughing and burning in the

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* Mr. Scott adds, "if any nobleman or gentleman will condescend to let me a fen-farm, only from year to year, I will produce sufficient bondsmen for the payment of the rent, or pay a year's rent beforehand; and I pledge myself to commence marling the estate, and every other practical improvement. Or I am willing to superintend the marling of any estate in the fens, for any nobleman or gentleman, and see it done with accuracy, and in the very best manner. If a few examples were once set, the advantage of marling the fens would prove so great, that I doubt not but that in a few years, the fens in general would be marled, to the unspeakable advantage of the land owner, the farmers, and of the public in general."

Bedford level, (where it is practised more I believe than in any district, of equal dimensions in the whole world), that it is the very best branch of agriculture that can possibly be adopted on all old swarded low lands, as an introduction for ploughing them to sow with cole seed; and that such old swards need not be ploughed very thin, nor indeed is it practicable to plough the land thin the first time.

Ploughing and burning also is the very best mode of cultivating all old swards on light soils, preparatory for sowing turnips; or preparing old swards on strong clays, for cole-seed or any other crop.

Low lands or light soils, brought into a fine state of cultivation, may be burned about once in ten or twelve years, if the ploughing be thin, the ashes spread immediately, and the land preserved from burning into holes; this is a most excellent preparation for cole-seed, turnips, or any other crop.

The fen ploughs are the best in the world for this business, as they will plough the land the thinnest (and it cannot be ploughed too thin); the fen ploughs however are capable of being improved, so as to plough much thinner than they will at present, and to plough three times as much in a day. This will be fully explained in a treatise on cole-seed, which it is my intention to publish.

III. *On Irrigation, or Watering.*

Irrigation, or artificial watering of meadows and other low lands, is in a very backward state in Huntingdonshire, although the county possesses in some parts of it, as many natural advantages for this rich and extremely valuable mode of improvement, as any district in the united kingdom. I know many places in it, that might be irrigated or flooded, at so small an outlay, that the crop of hay and after grass would more than pay all the expense the first year, and for a trifle annually laid out afterwards, the land would thus be of double value for ever. What a pity that some nobleman or gentleman would not cause this improvement to be adopted in a few parishes, and then the example would soon cause farmers and others to adopt the same plan in similar situations, for their own advantage.

I hope, therefore, that, for the good of the public, the interest of the land-owners, and the benefit of the empire at large, this very important business will be taken up, and prosecuted with spirit. I will most willingly assist in carrying it into practice, and will inform any nobleman or gentleman *gratis*, where this branch of agriculture may be adopted with great success, having practiced irrigation on estates under my own care, both in Staffordshire and Shropshire.

IV. On Draining the Fens.

There have been many enclosures in Huntingdonshire and other counties, that drain through the port of Lynn, within the space of eight or ten years past. And it was the opinion of many of the gentlemen that superintended the draining of the fens, and the inhabitants of the fens in general, that these enclosures would cause the waters to come so quickly and rapidly into the fen rivers, that it would cause the banks to break; and that ultimately these enclosures would ruin the fens: this opinion alarmed the inhabitants of the fens in general in a very high degree, for several winters; but I assured them, that if the first floods did not happen to be so large as to break the banks, the highland waters coming into the fen rivers quicker, and with more velocity than usual, would greatly improve the drainage of the fens, as they would scour the rivers; their weight also would grind them deeper, improve the outfalls, and would drive the sands at the outfall to deep water at sea: consequently that these numerous enclosures would greatly improve the drainage. The facts have happily turned out as I foresaw that they would, for the drainage of the fens is greatly improved, and is annually improving (in my judgment) in a very rapid degree; and the numerous enclosures in the adjacent highland counties, is the chief cause of this great improvement. Indeed I have not a doubt but that these enclosures will continue to improve the drainage of the fens, in a surprizing degree.

As the large Whittlesea meer, as well as Ugg and Ramsey meers, are reservoirs that receive and hold the highland waters, and spoil the surrounding fens, and also greatly prevent the highland waters from scowering and grinding the fen rivers and outfalls; these meers therefore ought to be drained, and the waters that run through them confined to narrower channels, and then these meers would be some of the very best lands in the fens. If the meers were thus drained, the rich land that would be gained, would in a very few years pay fifty per cent. to all the proprietors, besides the advantages that the drainage of these meers would prove to the fen rivers and outfall. As there are also about a thousand acres of washes betwixt Downham and Earith, left as reservoirs in great floods, these nuisances to fen drainage operate the same as the meers on the rivers and outfall, that is, causes them to choak up fast with sand, mud, &c. therefore these washes should be embanked. But to prevent this embankment of the washes from producing any dangerous consequences, only one hundred acres more or less in a year, might be embanked by way of experiment for a small expense; and with sluices to let the water out, these washes might be irrigated in the very best possible manner. If the banks of the washes were made from two to four feet

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feet high, that would prove high enough to preserve them in general, either for grazing or for mowing. And in great floods, the washes would still continue to be as good reservoirs as they were before they were embanked at all, and small floods might be taken into the washes by sluices, and then such floods would irrigate or flood the washes in the very best manner. When the floods subsided, the water might be let off either by sluices, or cutting a few gutters through these counterbanks. These banks might be made very narrow, as well as low, and consequently for a small expense indeed, especially as there is plenty of materials for such banks in all these washes.

If these little counterbanks were properly planted with oziers, they would soon become proof against any flood. And I have long laboured to recommend the planting of banks in the fens with willows, to be tried by the corporation of the Bedford level, and for a trial a few acres might be first embanked and planted in the washes, and the plan fully proved. Indeed I will try the plan at my own expense, if the Honourable Corporation of the Bedford level will grant me leave,—*Pro bono publico*. Farther to improve the rivers and outfalls, the Eau-brink cut should be completed.

If these meers therefore were drained, and the washes embanked, the Eau-brink cut completed, the fens clayed, and the Bedford level irrigated, what might not be done under the auspices of the corporation? The fine fertile fens would not only prove by much the richest, largest, and most productive district in the British dominions, but I believe by much the best level of its size, on the surface of the whole globe.

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OBSERVATIONS

ON THE PROPOSED EAU BRINK CUT FOR THE FURTHER DRAINING OF THE FENS.

Written in 1794.

By CHARLES VANCOUVER, Esq.

PART I.

OF THE FENS.

SECTION I.

Of their Nature and Origin.

SO much has already been written on the subject of the fens, that when I first engaged in the present undertaking, I greatly despaired of being able to add any thing of moment to a subject so far exhausted. It is not however without some hopes of being useful, that I at present venture a few conjectures on the subject, trusting to the indulgence of the Board of Agriculture, and my subsequent readers, for such inaccuracies as the very short time that has been allowed me to examine the country, and form an opinion upon it, in some measure entitles me to look for. I am nevertheless, much concerned that an opportunity has not been offered me of pursuing my inquiries on this occasion with that minuteness and attention, with which the operations of nature ought ever to be regarded, particularly where I have chosen nature principally for a guide.

As my leisure has not afforded an opportunity of reading upon the subject, of course my facts, both historical and otherwise (touching the original and present state of the fens) are drawn solely from actual observation, and from conversations with the most intelligent inhabitants I have met with by the way in that hitherto ill fated country. From their data alone, my conclusions will be drawn.

Whoever will make it his business to examine attentively the surface and structure of the fens, will find that the general bed of the Bedford level, or the ancient and natural surface of the country upon which the great body of the fens now rests, and which bed consists chiefly of a strong retentive gault or clay, *was once, and* (for aught we know to the contrary) *is at this time, sufficiently elevated above the level of the sea to drain itself.* At the same time that I assume this opinion as a point of unquestionable certainty, it is necessary to bear in our remembrance that not only the valley in which the level of the fens now lies, was then covered with wood, but that the higher parts of the country, particularly the counties of Huntingdon, Bedford, Buckingham, and Northampton, were one continued forest also; I am particularly desirous of impressing this idea, as being of consequence in leading to a more perfect knowledge of the primary cause and origin of that vast mass of vegetable matter which now composes the body of the fens, and I shall therefore illustrate it by a reference to the case of Ireland.

When in former ages the country of Ireland was divided into principalities, colonized from different nations, and subdivided again into various tribes, a constant and cruel warfare appears to have been waged among them. At that time the whole country was covered with wood, and as advantages were obtained by one chieftain over another, or as their views of annoyance were likely to be answered by the measure, they set on fire (as has been done recently against the royalists in France) their adversaries' forests, thus destroying their strong holds, and despoiling them of their hunting grounds. The consequences were such, that many of the trees, only partly consumed by the fire, were thrown down by the succeeding winds, into and across the rivulets, by which the drainage of the country was naturally performed. An obstruction to the usual discharge of the waters was thus produced, and a large pond, or lake of water, soon spread itself over the whole level, which heretofore drained voluntarily through those channels which were thus choaked up. A prodigious quantity of putrid, and putrifying vegetable matter in the stagnant waters, gave immediate encouragement to the growth of vegetables of the aquatic tribe, which annually growing and annually proceeding to decay, proved a constant and regular cause of the accession of vegetable matter, and finally became a morass from which stage (by gradual means) it has increased to its present bulk, forming what in Ireland is called a bog: which like a spunge filled with water, swells in many places above the level of the country by which it is surrounded.

My first step towards the improvement of a large tract of bog in the King's County in Ireland was to form and recover an outfall drain, 12 feet wide and about a quarter of a mile long, at the foot of the bog which was designed to be drained. The bottom of this drain was formed of a compact retentive clay or gault; above which, in many places there was a depth of twelve and fifteen feet of turf more, under which, and on the bed or resting place of the bog, there were distinctly to be seen *ridges and furrows, the indisputable remains of an antient cultivation.* In other places, on the bed of the bog were found considerable quantities of oak, yew, and pine, all of which appeared to have been more or less exposed to the action of fire; the more valuable pieces of this timber were easily discovered by probing with a spit and then raised out of the bog; an oak, which I remember particularly, measured fifty-five feet in length, and twenty-two inches through at the butt end. Such of the yew as was not cut, or wind-shaken, was cut into planks and made into beautiful furniture, and for the remainder, as well as for the oak and pine, I found a ready demand for forming flood-gates, for building, and for farming use. Upon the gault or clay at the bottom of the outfall drains we found the dash and lid of an hand churn, and a large crane-necked brass spur, with a rowel a full inch in diameter.

The outfall drain being completed, and proper sluices erected to give a command of the water, the next step was to cut foot drains, or drains one foot wide and one spit deep, at right angles to and parallel with the outfall drain; thereby dividing the whole surface of the bog into squares of four plantation acres each. The following year these drains were deepened and enlarged to three feet wide, and two and a half feet deep. The result was, that within two years from the time the outfall drain was begun, the whole mass of bog from actual and accurate observation, subsided and shrunk downwards, four feet in perpendicular height; and from being in a state, in which with much difficulty I could step from one hassock to another, without slipping off, and sinking up to my middle, it became so far consolidated and compact, that the store cattle in the spring following, roamed over and browsed upon it with ease and perfect security.

The *mosses* of *Scotland* seem to be derived from an accidental and similar cause, and the *swamps* of *America*, though evidently of a later date, are chiefly to be imputed to an accidental origin. In confirmation of this latter opinion, I must

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I must solicit the indulgence of the Board, whilst I relate the amount of my observations as they regard this production of nature in that new and uncultivated country.

Many of the swamps of America (and some of considerable extent) are produced from the ingenious and unparalleled labours of the half-reasoning beaver. At the back of the town of Frankford in Kentucky (which is now the seat of the government of that flourishing and happy state) I was present at the cutting of a beaver dam, the heart of which consisted of a very large locust* tree, which had been cut, and thrown down by those animals, across one of the principal drains which discharged the waters of that plain, and of the higher lands into the Kentucky river. About two hundred acres of land were immediately recovered, the surface of which was composed of putrid vegetable matter or fen mould, clear from wood, and ready for the plough. It was in the early settlement of that town, and before any idea was entertained of its being made the seat of the present government, that I was called upon, in conjunction with another person, to value this reclaimed land ; and although the current price in the neighbourhood for the uncleared land of the first-rate quality did not exceed one guinea per acre, we readily agreed to a valuation of five pounds per acre for the reclaimed

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* The locusts of America, are the acacia of this country. The honey locust derives its name from a rich sweet pulp, that invelops the seed, which is enclosed in pods about nine inches long. The black locust is a beautiful tree, but not so strait and lofty : it encourages every species of vegetation under its shade. The honey locust is armed with strong spikes up the whole of the stem, and to its extreme branches. The black locust has also thorns, but less formidable. The timber of both is extremely hard and durable ; but that of the black locust is preferred, whether under cover, in the open air, or for posts in fencing.

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beaver pond. On the rich bottom lands upon the margin of the Ohio river, and all the river bottoms throughout the whole extent of that delightful country, forsaken beaver ponds and those still inhabited by that sagacious animal of several miles in length, and very wide, are gradually assuming the appearance and nature of morass; but which by cutting away the beaver dams, and opening the natural passage for the water, are hourly and easily reclaimed, and prove in a country like that (where the clearing of heavy timbered land is an expensive, tedious, and Herculean labour) an immediate convenience and an acquisition of considerable value to the owners and occupiers of them. The shades of death (as they are called) on the top of the Alleghany mountain, the buffalo swamp in the lower part of Pennsylvania, and the dismal swamp in Virginia, all seem to owe their origin to an accidental arrestment of their natural waters, but for which cause alone, their superior elevation would have left them dry ages ago, like the adjacent country.

From this view of the operations of nature in her silent and solitary course, is it not fair to infer, that a small cause compared with the magnitude of the effect (assisted by negligence, and confirmed by an operation of the ocean not possible to be controlled) may have produced the alteration in the level of the country now covered by the fens? The appearance of the effects of fire is not so generally seen on the timber that has fallen, or the stumps that are found rooted in the bed of the fens, as under the bogs of Ireland; still a sudden and violent tempest, or some other incidental cause, might have thrown down so many trees into the natural water courses, as to obstruct the discharge of the waters, and at the time of great floods, resist the floating off to sea the drift wood and rack, descending in great quantities from an high and woodland country.* The obstruction remaining for a few days only, would acquire additional strength from seaward, by the deposition of mud and sediment brought up by the succeeding tides, and lodged on the seaside of the obstruction thus formed in the principal river. In a few years a bank of considerable substance would be thus accumulated, and the land waters being thus arrested in their passage downwards, must of necessity be constantly increasing, and in a short time form one extensive lake over the whole level of the country which is now occupied by the fens. At what time it fell into that state, I believe there is neither tradition or historical record to afford us any probable account, unless we suppose it to have happened in the time of the Danes, by whom this part of England was much infested; but certain it is, that it must have been in that situation for many ages, or the prodigious quantity of vegetable matter, which now composes the body of the fens, could not have been produced, though it has evidently arisen from the same general cause that has generated the bogs of Ireland, the mosses of Scotland, and the swamps of America; (viz.) the annual growth and annual decay of vegetable bodies combined with too much water. In the state either of a lake or morass, the whole level of the fens would most probably have been at this day, but for the timely intervention of human industry. On the other hand, a country would have been raised to the highest level of the sea, on the coasts of the counties of Norfolk, Cambridge, and Lincoln, though the extent of the sea waters, and their effects inland, was then, and must for ever have been prescribed, by the acclivity of the country, and the presence of the land waters upon it. As far as the force and pressure of the sea waters have been made to penetrate inwards, by the power of winds and the strength of extraordinary tides, their effects are distinctly to be seen, by the silt and sea sediment they have left behind them; for as you proceed from the general line of the sea coast, into the bosom of the fens, the effect of the sea water gradually decreases; till at length it finally vanishes, and the surface of the level becomes a pure and unmixed mass of vegetable matter or fen mould.

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* I have seen the Ohio river, at the mouth at the Muskingham river, where it is about eight hundred yards wide, rise thirty-two feet perpendicular height in about five days; the top of the fresh ran at the rate of about five miles and a half per hour, and the whole surface of the river, during the greater part of the time, was covered with drift wood from shore to shore. A dam, formed by an arrestment of this drift wood and rack, and corroborated afterwards by the influx of the tides, depositing a sediment at the foot of such dam, must throw the whole country above in the state of a lake: such arrestments account for the number of mouths the Mississippi has at this time.

The same industry which has been exerted in endeavours to carry the surface waters of the fens to sea, has also been employed, but with more effect, in anticipating the operation which the sea must finally have had in excluding itself from the sea made countries of Marshland, Wisbeach, north and south side, and South Holland in Lincolnshire. These improvements have ever been regarded as of the first consequence to individuals and the public at large; and it is only to be lamented in many of them, that the adventurer suffers the new in-take to be too much exhausted by repeated croppings, before it is laid down to rest in pasture and in grazing ground, the state to which it is by nature most properly adapted.

We uniformly find a certain point of elevation, to which the sea raises its sands, before they begin to assume the appearance of salt-marsh. Here the first dawning of vegetation is samphire, and a species of grass which partakes a good deal of the same nature; and here the more loamy and divisible part of the sea-sediment is deposited, which gives a strength and consistence to the surface, which the larger and more gravitating particles of sea-sand below, are incapable of affording; and in proportion as this matter is exhausted, and deprived of its virtue by repeated crops, so we approach to an hungry silt, and the permanent value of the embankment is lessened. There are other points and of the first consequence to be attended to, in undertakings of this nature; particularly not to be too impatient, or too greedy in the embankment proposed. If the sea has not raised the salt marsh to its fruitful level, all expectation of benefit is vain, the soil being immature and not ripened for enclosing; and if again, with a view of grasping a great extent of salt marsh, the bank or sea wall is pushed farther outwards, than where there is a firm and secure foundation for it to stand upon, the bank will blow up, and in both cases great losses and disappointments will ensue.

It appears that a considerable part of the enclosed marshes on the sea side of the old Roman embankment in *Tid St. Giles's*, is valued by a proprietor only at eight shillings the acre, which can only be accounted for from the adventurer having been too early with that in-take, or from the improper treatment it has since received; whereas the new embankment on the opposite and east side of Kenderley's cut in the same parish, was greedily sought for, immediately after the bank was raised at thirty shillings the acre.

We shall now proceed to a farther investigation of the nature of the fens; in which I shall endeavour to account for their most singular phænomena.

Heat and moisture are inseparably connected with the process of putrefaction; *and it is impossible that any substance whatever*

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whatever can be brought to operate as a direct manure and food for plants,[*] *unless it has undergone the putrid ferment, and is rendered completely soluble in water, that being the only vehicle by which nourishment can be conveyed to the roots of vegetables.* We find the surface of the fens, which is occasionally exposed to the influence of the summer heats, consists of completely decompounded and putrified vegetables; and regarding the soil only, it is impossible to trace in it any vestige of the original substances that composed it. The sub-stratum, or turf-moor next below the soil, is also a composition of vegetable bodies, but in a less perfect state of rottenness or decomposition; and in this may very plainly be seen the original form and substance of its component parts. Below this again, and lying on the natural and antient surface of the country, is another stratum of vegetable matter, commonly called bears muck*; this stratum retains every appearance of what it originally was, saving its life and colour, being an assemblage of the roots, leaves and stems of an aquatic vegetation which has undergone but little alteration since the remote period of its first formation; because it has been beyond the reach of the essential principle of heat to combine with moisture and air in effecting its natural and necessary dissolution.

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[*] The farmer says, "if I apply my dung in this state, it is eaten by the land in the course of one year." It is granted that no appearance of the rotten dung will probably remain after that time; but it does not follow that its virtues are exhausted, because it cannot be found in the same form in which it was spread upon the land. The process of its operation as a manure, is unseen by the human eye, and the existence of it in the soil is only to be estimated from its effects. Upon a stubborn, cold, and compact clay, long dung may operate in fertilizing the soil, by rendering it more admissible to the ameliorating influence of the sun, frost, air, and dews; but it can never operate as a direct manure and food for plants, till it is rendered capable of combining with water. Top-dressings which contain a fixed alkali (which is indispensably necessary for the union of oil with water) saline or oleaginous matter, or a compound of them all, must in some measure, though not cognizable to our senses, be obedient to the same laws.

An opinion prevails very generally through this country, that the turf-moor which is usually cut for firing, has a quality of growing and of reproducing itself in a very short time. This idea originates from a well known fact, that when turf pits are made, they will in a few years afterwards, be capable of affording an equal quantity of a similar substance fit for the purposes of fuel. In opening a turf pit, it is usually found necessary to throw off about eighteen inches of the superstratum, which is always cast into the last made pit, by the side of which the new one is formed. This vegetable soil or fen mould is then in a proper state for producing a luxuriant vegetation, and in consequence, a prodigious growth of sedges, flags, reeds, and bull-rushes, are immediately produced; the very roots of which contain more vegetable matter, and are far more capacious and bulky than some of the plants which proceed from them. The greater part of these roots being generally, and the whole of the plants being constantly, in an annual state of increase and decay, will at once account for that very rapid accretion of vegetable matter which in a certain stage of rottenness constitutes the turf-moor.

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* This substance is cut into large sods, about twice the size of a common brick, and forms the red spungy kindling turf, which is sold in large towns for the purpose of lighting fires.

SECT. II.—OF THE GENERAL DRAINAGE OF THE FENS.

As the preceding section contains the amount of my observations and opinion, on the nature and origin of the fens, I shall now direct my attention to the next points which appear to demand our most serious consideration (viz.) the cheapest and most effectual means of forming a good drainage and navigation from the highland country, through the level of the fens to the sea; so as by one and the same means to render commerce more diffusive and beneficial to the country at large, and obtain a more effectual drainage of the fens and low grounds.

As the drainage of the fens and the navigation of the rivers passing through them to the upper country, are inseparably united, and must ever be regarded in a discussion of this nature as one and the same thing; it is necessary to establish some first principle, which of necessity applies equally to both, and from which, as from a point, we may take our departure, and to which we must return again. The level of the sea I conceive to be this point, since "all rivers run into the sea, yet the sea is not full; and unto the "place from whence the rivers come, thither they return "again."

The waters of the *middle level*, at this time diverted from their natural course, by the present forced system of drainage in the river Nene at Outwell, arrive within ten miles (reckoned on the general course of the old Ouze river) of Gunthorpe sluice, through which all the waters of the north level are freely uttered. From Outwell church, the waters of the Nene are driven six miles farther, before they can obtain a very slow and languid descent to seaward, through

Salterslode sluice. The same erroneous system prevails in the whole drainage of the middle, and the greater part of the south level, of the fens; and *is the legitimate offspring of the first diversion of old Ouze from its natural channel, and forcing its waters into the Lynn or lesser Ouze, through the cut which was formerly made from Littleport Chair to Priests Houses.*

From the highlands in Suffolk (between the Milden-hall and Brandon rivers) to the east of Welney, Outwell, Emneth, and thence to the sea, a positive dividing ground exists, formed by the hand of nature, strongly marked and distinctly to be seen between the waters of the Lynn and of the Wisbeach Ouze. The hanging level or natural inclination of the country on the north side of this dividing ground, draws the waters off to sea through the lesser Ouze to the outfall of Lynn; and on the south side of it draws them off to the sea through the greater Ouze to the outfall of Wisbeach. *To the cutting through this divided ground* (before mentioned) *in order to force the water of the greater into the lesser Ouze, are all the evils of the south and middle levels of the fens, and of the country below, solely and originally to be ascribed.* At this time the bed of the Ouze, where Denver sluices now stand, was at least thirteen feet below the general surface of the surrounding country; and then it was, that by the free action and re-action of the tides, the water flowed five hours in the haven of Lynn, ascended into the Stoke and Brandon rivers, and into other streams which nature had wisely appropriated to be discharged through that outfall; forming the bed of the Ouze to one gradually inclined plane *from the junction of the principal branches of the river in the low country, to the level of the ocean very near or in the harbour of Lynn.* Then it was, that the province of marshland was recovered from the sea; and all the country which by nature belonged to the drainage of the

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the Lynn Ouze was effectually drained, and made into good winter grounds.

The counteracting this disposition of nature, *by forcing a greater quantity of water into the river than it could discharge into the sea during the time of ebb*, necessarily occasioned the highland and foreign waters to over-ride all those, which during the time of ebb, would naturally have drained into the Lynn river, and gave the waters of Buckingham and Bedford an exit into the sea, in preference to those which lay inundating the country, within a few miles of their natural outfall.—In this condition at present, are all the lower parts of the country bordering upon the Lynn Ouze; and the country above Denver sluices, Downham, Marshland, and Bardolph fens, exhibits the most important of many other melancholy examples and evidences of it. In the higher parts of the country, the consequences of this measure seem to have been severely experienced, on the lands exposed to the unembanked waters of the old Ouze, between Hermitage and Harrimere. The old Bedford river was then cut, from Erith to Salterslode, as a slaker to the Ouze, to relieve the country through which the Ouze flowed, from Erith to Ely. The Ouze waters thus divided, a great part of them descended through the old Bedford river in a straight line of twenty miles into the Lynn Ouze. But as that work was judged insufficient and defective, the new Bedford, or one hundred foot river, was determined upon; and sluices were erected at Hermitage to drive all the waters of old Ouze from Erith, (through the one hundred foot) into the Lynn Ouze; but that river not having sufficient capacity to utter them to the sea, they reverted up the Ouze, the Stoke, and Brandon rivers, drowning the whole of that country, and finally urging the necessity of erecting Denver sluices as the only apparent cure for the evils with which the county was then oppressed, and seemed farther threatened with. In the execution of this business, with a view of bringing the bottom of the Ouze on a level with that of the one hundred foot river, (which was cut only five feet deep) it was judged expedient to raise a dam eight feet high across the bed of the Ouze, upon the top of which the sole or base of the Denver sluices was laid. This measure has not only defeated the purpose it was designed to promote, but has been the unfortunate cause of a body of sand and sea sediment being deposited in the bed of the Lynn Ouze, at least eight feet deep at Denver sluices; and only terminating in its injurious consequences at the mouth of the Lynn channel (or low water mark at sea). This shews to every calm and candid mind, the necessity of duly considering the probable effects of counteracting the laws of nature, in cases where nature appears experimentally to have had success on her side. By great and continued exertion the strength and ingenuity of man may in some instances delay the evil which otherwise would immediately accrue from a counteraction of those laws; but his energy is not only feeble, but soon expires; whereas that of nature is potent, and if relieved only from the operation of incidental obstacles, as it is unalterable in its essence, so it must be uniform in its effects, from the beginning of time till time shall be no more.

From a due consideration of the obstacles which will appear at this time to exist in what has long been considered the principal outfalling drain to the middle and south levels of the fens, it is surely reasonable to direct our attention to the general inclination of the country with respect to the sea, and to what has all along been pointed out by nature as the main outlet thither, for the waters of the middle and south levels, and see if some means cannot yet be devised for recovering the general course of the antient and voluntary passage of the waters through their natural channel of Wisbeach to the sea. To begin this inquiry we must take our departure from the low water mark from sea; and trace the effect of the tidal waters as they regard the discharge of the land waters, through the channels of Lynn and Wisbeach. On this occasion, I have been as accurate as the time and means in my power would enable me to be, but still I must lament the necessity I have been under of resorting to the materials of art rather than adhering closely to those of nature to establish my facts upon.

The flowing of the tide above the haven of Lynn, at stated distances to Denver sluice at the times I was moored at the entrance of the Lynn and Wisbeach channels, would be more satisfactory and conclusive to my mind, than any scientific authority, however high, and deservedly to be depended upon. Such data however as I have been able to collect from the flowing of the tides, will be found in the following tide tables.

TABLE of the flowing of the tide on the 19th day of November 1793, in the harbour of Lynn, and at the mouth of the Lynn channel, two miles below the Terror Sands, at the White or Flag Buoy, distant about fourteen miles on a strait line below the harbour of Lynn.

At the Mouth of the Lynn Channel.

Time.		Depth of water in which we anchored.		Rise.		
Hours.	*Min.*	*Feet.*	*Inches.*	*Feet.*	*Inches.*	
At 2		19	6			in which we anchored at dead low water.
3		21	4	1	10	
3	30	25	2	5	8	
4		28		8	6	
4	30	31	-	11	6	
5		33	8	13	2	Young flood at Lynn.
5	30	36	3	16	9	. . . .
6		38		18	6	. . . .
6	30	39	6	20		. . . .
7		40		20	6	. . . .
7	23	40	6	21		. . . .
7	40	41		21	6	Ebb began.
In 5	40	a flow of		21	6	

In the Harbour of Lynn.

Time.		Rise.		
Hours.	*Min.*	*Feet.*	*Inches.*	
At 5				dead low water, or the first flow of the tide.
5	30	6	6	
6		3	5	
6	30	2	3	
7		1	5	
7	32		11	
7	40			Ebb began
In 2	32	14	6	flow.

N.B. The above observations at the Flag Buoy in the Chops of the Lynn Channel, were made by Mr. Lionel Self, Mr. Middleton, (master pilot) and the Author; and those in the Harbour of Lynn, by Mr. Thomas Breame, and Mr. William Dunham; a gentle breeze blowing from the south east the whole time.

☞To explain in some measure the phenomenon that appears from the within tide tables, of the ebb in the harbour of Lynn, being noticed at the same point of time, it was felt in the mouth of the Lynn channel, fourteen miles on a straight line nearer to the sea, we must recur to the set of the tides in the bay which is formed by the coasts of Lincolnshire and Norfolk. The flood tide makes in Brancaster Bay on the coast of Norfolk about two hours sooner, and off Hunston one hour sooner than at the Flag or White Buoy, which is placed in the entrance of the Lynn channel, and of course returns in the same proportion of time before it is high water in the mouth of the channel. During the last hour's flood at the Flag Buoy, the tide off Hunston sets eastwardly, and towards the sea between the sunk sand and shore; in consequence of which, the water along shore in the old eastern channel, between Hunston and Nottingham point, is affected; and ebb in the harbour of Lynn, is felt sooner, than would be expected, from the harbour of Lynn being fourteen miles farther from the ocean than the mouth of the channel At the time these observations were made, the Terror sands, which are about two miles above the Flag Buoy, had not at low water more than four feet depth upon them.

TABLE of the flowing of one and the same tide on the 3d day of December, 1793, in the town of Wisbeach; also at Gunthorpe sluice, about six miles below the town: also on the north side of the Bar Buoy, about eighteen miles below the town, being in the entrance of Wisbeach channel; and also, in the harbour of Lynn.

On the North Side of the Bar Buoy.

Time.		Depth of water.		Rise		
Hours.	Min.		Inches.	Feet.	Inches.	
At 1	20	12				in which we anchored at dead low water.
2		13	9	1	9	
2	30	16	6	4	6	
3		19	4	7	4	
3	30	22	3	10	3	
4		24	6	12	6	
4	30	27	6	15	6	. . .
5		31		19		. . .
5	25	32		20		flood at
5	30	32	6	20	6	. . .
6		33		21		. . .
6	2	33	3	21	3	high water
6	30	33	3	21	3	. . .
6	40	32	6			sensible ebb.
In 5				21	3	rise or flow of the water.

N.B. The above observations were made by the AUTHOR, assisted by SAM. GARDINER, THO. GARDINER, and SAM. BOUCH. A gentle breeze at south by west the whole time.

At Gunthorpe sluice.

Time.		Rise.		
Hours.	Min.	Feet.	Inches.	
5	25			the first flow of the tide.
5	55	4	2	
6	25	6		. . .
6	55	7		high water.
In 1	35	7		rise or flow of water.

N. B. The above observations were made by THO. PEARS, who lives at and has the care of the sluice. There were 2 feet, 7 inches of water, at the time of young flood, over the threshold of the sluice.

In the town of Wisbeach.

Time.		Rise.			
Hours.	Min.	Feet.	Inches.	10ths.	
At 6	20				the first flow of the tide.
6	50	1	0	3	
7	20	2	6	3	. . .
7	50	3	5	3	
8		3	6	3	high water.
In 1	40	3	6	3	rise or flow of the water.

N. B. The above observations were made by MR. JOHN TURPIN, of Wisbeach.

In the harbour of Lynn.

Time.		Rise.		
Hours.	Min.	Feet.	Inches.	
At 4	12			dead low water, or
4	42	5	8	the first flow
5	12	3	10	of the tide.
5	42	2	6	
6	12	1	3	
6	30		9	high water.
In 2	38	14		rise or flow of the water.

N. B. The above observations were made by Mr. THO. BREAME of Lynn.

From the preceding tables the following summary may be drawn.

When the tide at the mouth of the Lynn channel has flowed three hours, and has there risen thirteen feet two inches, it is young flood in the harbour of Lynn. But as it flows in the mouth of the Lynn channel, two hours and twenty minutes longer, the whole flow or rise of the water there is twenty-one feet six inches, in five hours and twenty minutes of time; while the whole flow of the water in the harbour of Lynn in two hours and thirty-two minutes, is fourteen feet six inches; and (adjusting the difference between the watches) at forty minutes past seven, ebb has made, and is first noticed, as well in the harbour of Lynn, as in the mouth of the channel. The inference is plain, allowing a small effect for the operation of the tide in the eastern channel (as before explained), there is an absolute acclivity of seven feet perpendicular height, between the low water mark in the entrance of Lynn channel, and the low water mark in the harbour of Lynn; to overcome which acclivity and the obstructions upon it, in three hours of time, a force of moving water from the ocean of thirteen feet two inches perpendicular pressure is required.

Secondly—When the flood tide has been made four hours and five minutes at the mouth of the *Wisbeach channel*, it has there risen twenty feet, and at this time it is young flood at Gunthorpe sluice. It flows in the mouth of the Wisbeach channel fifty-five minutes longer, making in the whole time five hours, and the whole flow or rise of the water is twenty-one feet three inches. The time from first flood at *Gunthorpe sluice*, to high water there, is one hour and thirty five minutes; in which time the tide flows or rises seven feet in perpendicular height; from whence it is plain that there is an acclivity of fourteen feet three inches, from the level of the sea at low water, to the low water at Gunthorpe sluice. Again, when the water has flowed five hours in the mouth of the Wisbeach channel, and has there risen twenty-one feet three inches, the first flood is perceived in the town of Wisbeach. At this time it is high water at sea; though from the momentum of the tide, the water is continued flowing in the town for one hour and forty minutes longer, and there rises three feet six inches three tenths. From hence it is also plain that there is an acclivity of seventeen feet eight inches seven tenths between the low water at sea, and the low water mark in the port of Wisbeach; to overcome which acclivity, and the obstructions upon it in five hours of time, a pressure of water from the ocean of twenty-one feet three inches perpendicular height is required. It is also to be remarked, that when the water has flowed in the entrance of the Wisbeach channel two hours and fifty-two minutes, and risen thirteen feet nine inches, it is young flood in the harbour of Lynn; it continues to flow two hours and eight minutes longer in the mouth of the Wisbeach channel, where the whole flow or rise of the water is twenty-one feet three inches. In the harbour of Lynn the same tide flows two hours and thirty-eight minutes, and there rises fourteen feet. From hence it follows that there is a declivity of three inches more between the harbour of Lynn, and the mouth of the Wisbeach channel, than between the same harbour and the mouth of the Lynn channel; or in other words, that the low water in the mouth of the Wisbeach channel is three inches lower than that in the mouth of the channel of Lynn, or so much nearer to the low water mark at sea. From this view of the Lynn and Wisbeach rivers, the following opinions are fairly to be drawn: First, that the low water in the harbour of Lynn, is ten feet nearer to the low water mark at sea, than the low water in the port of Wisbeach. And secondly, allowing a fall of six feet four inches

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inches in the distance of near sixteen miles from Denver sluice to the harbour of Lynn, that there exists at the former place the same obstruction to the descent of all the middle and the south level waters, as the waters of the north level uttered through Gunthorpe sluice have to encounter and completely overcome, (viz.) about fourteen feet perpendicular height above the level of low water at sea. This difference however must be observed, that whereas Gunthorpe sluice is situated within twelve miles of the absolute and lowest level of the sea (and within a much shorter distance of where there is a constant and eternal depth of from seven to ten fathom at low water), Denver sluice is not within thirty miles of this lowest level, and to which point the land waters must descend, before it can with reason be said that we have got completely rid of them.

This being the present state of the Lynn and Wisbeach rivers, as they relate to navigation and the discharge of the land waters to the sea; the next objects which command our attention are the cheapest, the quickest, and most effectual means of removing the obstructions at present existing in their respective channels; and bringing deep water, or the level of the sea, as near as the laws of nature will admit of, to the seats of the present marine navigations; to the end, that by their improvement the drainage of the country may be rendered more immediate and compleat, and a more permanently valuable property be restored to individuals and secured to the nation. In the furtherance of this object, and as it particularly regards navigation and the drainage of the country through the haven of Lynn, a plan has been submitted to the consideration of parliament as an effectual and complete remedy for all the evils so justly to be deplored, in the middle and south level of the fens, and the country below bordering upon the Lynn Ouze. A part of the preamble of the bill sets forth; that by altering the course of the river Ouze from a place called Eau-brink (below St. German's bridge) to the port of Lynn, an improvement to the outfal of the river will be made, and a better drainage produced both to the adjacent country, and also to the middle and south levels of the fens. On this proposition I will be as candid and as clear as possible; and that we may the better understand the basis and foundation upon which the superstructure must be raised, I shall here subjoin a journal of several sets of borings which I ordered and saw made in the direction of the proposed cut, also under the walls, and in the town of Lynn.

Journal of a set of borings made in the direction of a cut proposed to be made from the upper end of the haven of Lynn, across the marshes to strike the Ouze river again, at a place called Eau brink.

No. 1. Being in the middle of the proposed cut at its entrance into the haven of Lynn, and at the common high water mark.

At the surface, an infinitely fine sea sand or silt, mixed with ouze or sea clay; at two feet a more compact and firmer substance, but still mixed with silt; at three feet, the same substance continued, but touching upon a black dry sea mud, with a small mixture of silt.

N. B. The surface and substrata thus far, when wet having a greasy appearance and feeling to the touch; the only sure way to discover the presence of the silt or fine sea sand is to put a small portion into the mouth when it will be immediately detected.

At four feet, the same kind of mud, but rather softer continued, and here too was found water; at five feet, a grey ouze with a small mixture of fine silt; at six feet, nearly the same, at eight feet, a black soft sea mud (through which the boring rods with the strength of a single person can with ease be pushed a foot and eighteen inches at a time;)

time ;) at ten feet, a very soft black mud, extremely offensive to the smell, and containing a portion of very fine silt; at twelve feet the same, at fourteen feet, little or no difference ; at fifteen feet, vegetable matter or moor appeared, the depth of which is uncertain.

No. II. Being on the north side of the north sea bank in the land of which is a ploughed field.

The surface, an hazel coloured greasy soil, with a mixture of silt; at two feet, a brown compact loam, with a mixture of silt; at three feet, a dry, firm and compact loam, with a mixture of silt ; at four feet, a wet soft loam with silt ; at six feet, a black soft sea mud, (which was equally penetrated by the boring rods, as the black sea mud at eight feet in the first boring) ; at eight feet the same ; at nine feet, a putrid vegetable matter or moor, very dry and offering some resistance to the bite of the auger ; at ten feet, the same ; at eleven feet, the same, with a strongly marked appearance of rotten wood ; at thirteen feet, vegetable matter but less firm ; at fifteen feet, moor, with rotten wood.

No. III. Being on the south side of the north sea bank in Mr. Carey's land.

The surface, an hazel coloured loam, or gentle clay, with a mixture of vegetable matter and silt ; at two feet, a strong dry loam with silt ; at four feet, a similar substance, but soft and wet ; at six feet, a dry vegetable matter, or moor ; at eight feet, the same ; at ten feet, a soft buttery clay of a bluish colour (which I expected to have found the natural and original surface of the country) ; at twelve feet, much the same as the above, but rather softer. By digging eighteen inches, we reached a depth of sixteen feet and a half from the surface of this level, where I was disappointed in finding a white sea sand, or coarse quick silt.

No. IV. Being about eighty yards distant, and below the river bank at Eau-brink, on a low part of the common, about the middle of the proposed cut, and by the south side of the Sampson's wheat field, marked thus ÷

The surface an hazel coloured loam or sea clay, with a mixture of fine silt and vegetable matter; at two feet, a dry tender loam, containing some hard crombs, (which easily dissolve in water) and silt; at four feet, a sheer dry silt, without any mixture of unctuous matter, ouze, or sea clay; at five feet the same, but loose, owing to admixture of water; at six feet the same, at eight feet the same, and very easily penetrated: at ten feet the same, but blackish coloured; and making still less resistance to the weight and working of the boring rods; at twelve feet the same, but with a more active silt; at fourteen feet, a very coarse silt, or sea land.

No. V. Being between the present harbour and under the walls of Lynn, a little below the Ball fleet, at a place called Miller's entry.

The surface, silt, with a mixture of ouze or brown mud; at two feet, silt and rubbish at four feet, black firm silt, with some rubbish; at seven feet and a half, a closely compressed black sea mud with some silt, but little or no rubbish; at ten feet the same, at twelve feet, sheer firm silt, but of a lighter colour; at fourteen feet, coarser sheer silt, and of a still lighter colour; at seventeen feet, cockle shells, burnt bones, brick rubbish, black gravel, and silt; at eighteen feet, black coloured firm silt; at nineteen feet, a brown coarse silt with a vein of very coarse sand; at twenty feet, sand or very coarse silt and no perceivable mixture of clay or ouze.

No. VI. Being in Mrs. Partridge's back-yard, and at a short distance from the haven of Lynn.

The first, nine feet through made ground, then reached silt and water; at twelve feet the same; at sixteen feet and a half a sheer silt, which being very quick and active, was

washed

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washed by the water into the auger hole, so that after several attempts, it was found impossible to penetrate farther.

I have been careful to preserve samples of all the most striking varieties of strata in the several sets of borings, to justify the description that I have given of them. They exhibit at one view, the structure of the country through which the cut is proposed to be made; and at the same time shew that the site or foundation of the town of Lynn, is composed of the same adventitious matter, excepting the rubbish, (though in a more compressed state from the incumbent weight and traffic of the town) with that which forms the country of Marshland, and which is plainly to be traced through the whole level, from the foot of the highland country to the fens and to the sea. To those who are acquainted with the means of prescribing a path to the raging tides; saying, thus far shalt thou go, and no further, or directing the descent of refluent waters through quicksand and morass, I must leave the practicability of constructing such banks to the proposed cut as will effectually secure the surrounding country. Were we acquainted with the depth of the cut intended to be made, and had we an opportunity of comparing it with the level of the country and with the section of strata through which the cut must go, some clue might be formed towards a tolerable judgment; but pressed as I am at this time with the other objects of the survey, it would be imprudent to give an opinion which I cannot be prepared to support. In this situation, I must leave this part of the question as to the construction of the cut; but I shall say a few words upon the supposition of this work being executed.

It is universally agreed by all writers on mechanics, that bodies in motion operate with their fullest force, when they strike another at right angles; and that their power diminishes in proportion to the obliquity of their stroke. This being the case, and seeing that the town of Lynn is situated on a bed of sand, and of compressed sea mud, I have no hesitation in pronouncing the inevitable destruction of it and of its present harbour, were the proposed cut to strike its walls nearly or in the same direction with that of the present river above the town; but as this direction cannot obtain from the proposed cut, no danger is to be apprehended on that score. Why in fact it does not operate to that destructive end at present, is owing, I conceive, to the meandering circuitous course which the tidal and fresh waters now make among the loose sands, in the extensive bason above the town; where, after the first quarter's ebb, the sands above the town begin to top and shew themselves. At this time the ebb begins to act with a powerful and inconvenient force, and a sharp recoil in the returning waters is produced; carrying the channel from a little above Purfleet, directly across the haven to the west side, that is towards old Lynn.

This being premised, we come next to a consideration of some of the probable consequences of the proposed cut, supposing (as before) the banks strong and permanently made.

The present harbour of Lynn forms the segment of a circle of about twenty degrees, in the hollow of which and extending along the walls of the upper part of the town the ships ride and lie at low water, and receive and discharge their cargoes; and from its contiguity to the wharfs and granaries, the greatest part of the shipping business of this port is done here. Lying thus in the hollow of an arch, the vessels are defended against the force of the flood tides, by the lower part of the town acting as a pier, which shoots the *flood tides* in a straight line through the haven into the bason above; at which time so powerful are its operations,

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operations, that an eddy is always produced in the harbour, and at times, a counter-stream (called the *trains*) of such vehemence, as to endanger the mooring of the vessels *down stream*, whilst the water is swelling or flowing in the harbour, at the rate of twelve and fourteen feet in the hour, directing its stream upwards. Now if from the removal of the present channel into a line with the proposed cut, the present harbour should be silted up, and the shelter, which is now afforded to the shipping by the town from the north and easterly winds, should to a certain degree be lost, the shipping would then ride or lie in the middle of the haven, fully exposed, on the one hand, to the fury of the flood tide, combined with that of the northerly and westerly winds, and on the other, to the undiverted force of the ebb land waters, strengthened by a southerly wind, and descending in a torrent down the proposed cut, into and through the haven of Lynn. What effect this might have, in addition to the increased distance to which the harbour may then be removed from the wharfs and granaries, must be left to those who are acquainted with the shipping and lighterage business of the port. In other respects I can have no hesitation in forming an opinion: for should the waters be led down the channel which now forms the harbour of Lynn, considering the increased violence with which they must act from their precipitant descent, unless capacious locks are made for the reception of shipping and small craft, (for which however the port affords great conveniency) little business can be expected to be done during the last three quarters ebb. Considering also the impelling and sapping powers of such waters, upon a foundation so extremely moveable as that of the town of Lynn, although those waters may act upon it nearly in a tangent (and of course approach the direction of all others the least liable to produce injury) yet, unless great care be had, and considerable works erected, to preserve the present foreland and foot of the town, between its walls and harbour, the most serious evils to the west side of the town may justly be apprehended.

In the distance of five miles and five furlongs, what is comprehended in the present bend of the river, from Eau-brink to the haven of Lynn, there now exists a fall (according to Mr. Watte's scale of levels), of four feet ten inches and four-tenths, (equal to ten inches in a mile); and which in a confined channel would produce a torrent; but which in the present wide and extended bay, where the waters ramble over and among a large expanse of loose sands, their gravitating powers being thus diminished, the existing fall is reduced to a dam, against the waters descending from the upper country.

It is generally allowed that three inches fall in a mile in a confined channel, is sufficient to produce a smart current; now allowing a fall of something less than four inches in a mile for the current through the proposed cut, the water on the opening of the cut may be presumed to subside four feet at Eau-brink; between which place and Denver sluices, in the distance of ten miles, there is said to be a fall of one foot five inches and two-tenths (allowing nearly the same fall for the current of the water, between Eau-brink and Denver sluices as is allowed through the proposed cut) provided the bed of the river presents no obstruction from four feet under the present low water mark at Eau brink, to two feet, one inch two-tenths, under the present low water mark at Denver sluice. So much therefore, viz. two feet one inch two-tenths would the water be lowered also at Denver sluices on the opening of the proposed cut. This line of subsided water extended from the haven of Lynn, through all the streams at this time discharging into the Lynn Ouze, will, according to the present

sent fall of water in those several streams, terminate in a point or nothing: beyond which several points of termination, the good effects or operation of the proposed cut, can in the first instance have no influence whatever.

Upon these principles it should seem, that the momentum of the first quarter's flood through the proposed cut, will be greater than the first quarter's flood now is through the haven of Lynn; inasmuch as in the haven of Lynn it has to encounter with an acclivity of eight inches per mile; whereas, in the proposed cut, it will only meet with half that obstruction. Also, as the water down the proposed cut will be led nearly in a strait line into the harbour of Lynn, its present recoils would be lost; it would act with its full weight, and propel itself to the seaward, over and through the loose sands in the bay below the town of Lynn, with its utmost force. It would also appear, from the same reasoning, that the current of the water in its direction, must tend to straiten the present channel, and remove some of the most formidable obstructions in it; and finally find its nearest way to sea, and in its consequences bring deep water (or the level of the ocean) nearer to the port of Lynn than it is at present.

The result, however, from the whole of these considerations ought to be regarded, more as the probable consequences, than the certain effects of the proposed measure. The lowering the water from the upper end of the haven of Lynn, to the ascending line of subsided water in all the streams, discharging into the Lynn Ouze above Eau-brink, *must* produce these advantages. In proportion as the water is thus lowered in all these rivers, lodes, and leading drains, the engines at present established will have a less head to work against; and as the soakage through the spungy fen banks will be considerably reduced, their effect in lifting the water out of their respective districts, will be more immediate and certain. By lowering the water in the drains, their capacity may be enlarged, and by fresh digging, their bottoms will approach nearer to the bed of the fens, when either the gault, or gravel, will furnish a greater, more constant, and more wholesome supply of water during the dry season of summer, than at present; and the partition drains will form a more effectual and permanent fence.

The relief which the outfall through the channel of Wisbeach, holds out at this time to the middle level of the fens, and how that advantage may be prudently improved, come next under consideration.

It appears from the preceding tide tables, that in the distance of twelve miles, from the Bar buoy at the entrance of the Wisbeach channel to Gunthorpe sluice, there now exists an acclivity of about fourteen feet; but as there is a constant depth of from seven to ten fathoms at low water between the Bar buoy and Eye, so on a more minute inquiry, the obstruction will be found to lie within the distance of eight or nine miles from Gunthorpe sluice, rather than twelve, as set forth in the journal of observations.

I am here at a loss for an accurate data which I wished to have derived from the flowing of the tides, above the haven of Lynn to Denver sluices, at the time I was moored in the entrance of the Lynn and Wisbeach channels; for certain I am, (although I am not prepared to prove it), that when the tide flows seven feet high at Gunthorpe sluice, it does not flow, or make the same depth of water, at Denver sluices. This assertion being granted, by inference it follows, that the low water mark at Denver sluice is higher than the low water mark at Gunthorpe sluice; a fact of considerable moment, and which ought to be accurately

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curately ascertained, in order to give it its full weight and consideration.

The waters of the North level, at this time descend from Gunthorpe sluice into the sea, with considerable rapidity; whilst in the most calamitous times, those of the middle and south levels of the fens, are frequently locked up at Denver sluices and Salter's-lode, for several days together, by the power of the tides and superior pressure of highland waters. The proposed cut from Eau-brink to the haven of Lynn, presents to us a probability of lowering the water twenty-five inches at Denver sluices, and an hope that in time the advantages resulting from that measure may be greatly improved. The recovery of the original and natural outlet for the discharge of the high-land and fen waters to the sea, through the channel of Wisbeach, encourages a well grounded expectation that the whole country now occupied by the fens, may yet be recovered to its pristine state; and rendered equally fruitful and desirable to inhabit, as any of the most captivating vallies in the three kingdoms.

The very important benefits which have hitherto resulted to the navigation of the port of Wisbeach, and the drainage of the north level of the fens, from the contraction of the Nine waters below the river's end to the washway, by Kenderley's cut; justifies a conclusion, that by the farther contraction of the descending waters over the washway, the navigation and drainage through the Wisbeach river, will be farther improved. To effect this contraction of the refluent waters, two modes are presented to our view: the one sudden, but expensive: the other slow and cheap, but equally certain of the desired effect. The former is, to continue Kenderley's cut through the embanked marshes on the shore of Lincolnshire, below the banks end to deep water at the Eye. The latter, (which is the slow and patient method of the Dutch and Flemings), consists in pursuing from the mouth of Kenderley's cut, the general course of the present channel over the washway; and placing on each side of it logs, to which should be attached fascines and hurdles, to procure an arrestment of the silt and sediment suspended in the waters of every tide. This latter work, carefully attended to, and assisted when necessary from time to time, would in a few years form such a strength of foundation, as to resist the utmost efforts of the winds and tides; and since after the first quarter's ebb, (for it is designed that the fascine work should be covered at high water), the returning waters would now be confined to one certain channel, they would not wander over the washway as they do at present; but act in this prescribed channel with their utmost force. The sands and marshes would fill with sediment, and soon grow up to the highest level of the sea; they would rise higher and higher with each succeeding tide, whilst, from the moveable nature of the bed of the channel, *that* would be scoured and made deeper and deeper, till at length it would be brought to the level of the low water at the Eye below; or probably to the lowest level of the sea. Then, if the salt marsh shall have been embanked or enclosed from the sea too soon, its surface will be so much improved by the richer and finer parts of the sea sediment, that its fertility would be immense, and during the neap tides, the high water in the channel thus formed, would generally ride below soil; and thus a country of prodigious extent and inestimable value, would be rescued from the ocean, and added to the national stock.

What effect this deepening of the river below must have upon navigation, and the discharge of the land waters from above, it is easy to conceive; for under all the evils which this outfal at present labours, it still retains a power of affording relief to the middle level of the fens, of from twelve to eighteen inches of water, when that devoted country is labouring under the most deplorable of evils, and can obtain no succour or relief whatever, through the outfal of Lynn. And this strongly enforces the necessity of taking up the Outwell canal scheme, upon a broad and extended bottom, combining *navigation with drainage;* which (as I before observed) in a discussion of this nature, should ever be regarded as one and the same thing.

SECT. III.—OF THE INTERNAL WORKS AND DISTRICT DRAINAGE OF THE FENS.

WHEN the dictates of nature are pursued, as in the instance of recovering the proper outfal of the waters of the north level of the fens through the channel of Wisbeach, the good effects of the measure speak loudly for themselves. Additional works are however yet necessary to the completion of that excellent drainage; and so far as it is possible to effect them through the influence and exertion of the gentlemen, who have the care of the principal estates on the north and south sides of Moreton's leame, so far I am persuaded that their unwearied diligence and good sense will not suffer them to remain neglected.

The obstructions which for ages have existed in the town of Wisbeach, to the discharge of the water of the Nene and Great Ouze below to the sea, were a principal cause of the decay and final loss of that outfal; and are at this time a very great hindrance to the drainage of Waldersey, Wisbeach north and south side, and to the present navigation of the Wisbeach river. The removing of the obstructions from above Guyhirn down *through Wisbeach*, and continuing the course of the river below the town as strait as conveniently possible, to the upper end of Kenderley's cut, must have a very important effect upon the internal drainage of the fens; as thereby some of the present meanderings of the Wisbeach river would be cut off, and the general bed brought to a more evenly inclined plane from Peterborough to the eye at sea.

Another work of considerable moment proper in this quarter, is, the forming of an inside wash-bank; not exceeding three feet in height, at a proper distance from, and parallel with the navigable river from Guyhirn to Peterborough. The effects of this in the first instance, would be, that the spring tides would be restrained from spreading as they now do, over the lower part of the washway; and the small freshes from the highland country, would be caught above, and confined in their descent to the channel of the present river; thereby scouring it more effectually, and at the same time preventing the deposition of sediment, from the land and sea, overflowings of the wash-way, and the consequent reduction of its capacity as a reservoir.

Other consequences would result from this measure, such as the protection and encouragement it would give to the growth of reeds and bull-rushes between the navigation and washbank, which at the time of high winds, would break and smooth the swell of the water, acting upon and against the north bank of Morcton's Leame; and prevent the destructive operation which the winds have on the banks of all washways, when full of water. The rendering the lands in the washway constant and good summer grounds, must also prove a considerable benefit. But in the execution of this work, regard ought strictly to be had to the preservation

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preservation of the navigation from Whittlesea to the present navigation of Moreton's Leame, through a drain called Delph Dyke; that being the nearest and best communication between the town of Whittlesea and the port of Wisbeach. The navigation from Guyhirn through the counter drain up to Whittlesea field, should also be preserved for the purpose of conveying proper materials for the repair of the north and south banks of Moreton's Leame.

Underwood's drain, which heretofore conveyed the waters of Ugg mere, Ramsey middle moor, Fasset fen, and Whittlesea lamas grounds, was of considerable relief to the country surrounding Whittlesea mere, by conveying these waters to Whittlesea dyke, and Bevil's leame, is now in a great measure lost as a drain, and is useless in many places even as a mere fence, between the drove way and the abutting lands. This is chiefly to be attributed to the diversion of the Whittlesea mere, and land waters at the angle corner through the Whittlesea dyke, from their strait course in the judicious continuation of Bevil's Leame to Moreton's Leame; where the water is constantly dammed up, and deprived of its natural descent to seaward, through the outfall of Wisbeach. By this means, the water is forced into a circuitous course, through Whittlesea dyke into the old Nene above; and through the twenty foot drain below, along Waldersey old bank, striking the old Nene, a little above the upper end of (the old grown up) Elm Leame. Thence it is driven through the Nine and Popham's Eau to Nordelph corner, where, uniting again, it is forced to Salter's Lode Sluice, and there it waits an uncertain, short, and languid discharge in the Lynn Ouze.

From this forced system of drainage (which from the journal will appear to cost the owners and occupiers of the middle level from two shillings to six shillings annually per acre) we find this melancholy result: that after the waters have been thus lifted and driven to Salter's Lode, they are often overridden by those of the one hundred foot old Bedford, and Ouze rivers, and frequently obtain no utterance whatever into the Lynn Ouze for several days together. The only relief to which the country can at that time look up, is small indeed; and is merely that of admitting the waters into the embanked washway of the Tong's drain; through which, (according to the present system of draining) for obvious reasons, all the waters of the Nene ought long ago to have been discharged into the Lynn Ouze. The distresses of the country at these times, are beyond all description or belief. The inhabitants are watching night and day upon the banks cradging (or raising) their tops, and in hourly expectation of the banks giving way and drowning the whole of their devoted country; and too often when the wind blows hard from the south west, their melancholy presages are verified. The waters being already lifted to the height the district powers can force them to, are thus prevented from reverting again towards Whittlesea mere, (which in calm times they do) to the temporary relief of the fens, but to the utter destruction of all the skirting lands which border upon the highland country.

The upland waters of Berry, Biggin, Wood Walton, Sautre, Conington, Glatton, and a part of Holm (which formerly flowed into Ugg and Ramsey meres, and thence were conveyed by a branch of the Nene river, past Binwick to the Wisbeach outfall) have been diverted from their voluntary course by the forty foot river, or Vermuden's drain, into which they are lifted, and forced through Welche's dam, into the old Bedford river. Upon this latter river, between Erith and Salter's lode, there are nine powerful engines at this time employed in lifting into it the waters out of their respective districts; its doors or flood gates have now (20th November 1793) five feet depth of silt and sediment lodged against them; and should the high land waters continue to fill the wash or reservoir as full as it is at present, the presumption is, that the slow discharge of that water from the mouth of the one hundred foot river above into the Ouze, will continue to keep them shut for some time longer. These engines have now an head of fourteen inches to work against above the threshholds of their water ways, and the utmost that the strongest and most powerful of them can do with effect, is to work against the level of the axis of the water wheel, and as these mills are generally pitched against a four feet head, if the wind is sufficient to enable them to work against this head, the river will then be full to the top of its banks.

As the discharge of this water into the Ouze, is rendered impossible from the superior height of the silt and water pressing against the doors of the old Bedford river; these engines will continue lifting, till the water in the old Bedford over rides that in the forty feet river: the doors at Welche's dam will then of course be shut; and the waters that are thus lifted into the old Bedford and forty feet rivers, from the spunginess of their banks will be constantly soaking through them, and spreading again into and through the same districts out of which they have before been raised; this was a consequence most severely experienced during the greater part of last winter, and an evil which seriously threatens the country at this time. The whole middle level, so far as the influence of this pernicious and expensive system of draining extends, and it is wide indeed, exhibits a melancholy proof of the truth of this assertion.

Can there be any thing in nature more preposterous than forcing the waters of Whittlesea, Ugg, Benwick, and Ramsey meres, along the circuitous course they are now obliged to make to Salter's lode; there to remain locked up on an higher level, than when they might by a short passage, have had a rapid and tumbling fall into the sea from Gunthorpe sluice?

A tunnel has been laid under the bed of the old Bedford river (by an ingenious and enterprising gentleman) to drain a part of the embanked washway lying between the old Bedford and one hundred foot rivers. The water rises through this tunnel in the counter-stream, on the north-west side of the old Bedford, and thence spreads into the level between the old Bedford and Well creek. A very powerful engine erected lately (by the same gentleman, between Nordelph corner and Salter's lode), lifts the water from this level into Well creek, proving thereby, that the present system of draining by the old Bedford river, is not only ineffectual, but radically wrong.

It appears from an examination of the one hundred foot river, that for about a mile and a quarter above Denver sluice, the wash bank on the west side of the river is raised to nearly an equal height, with the prime bank on the east side. A bank of the same height then stretches across the washway, to the east bank of the old Bedford river; thus excluding from the lower part of the wash, the wash waters from that bank to the Ouze river. On the south side of this bank is a drain called Wellmere lake, at the confluence of which with the one hundred foot river there was heretofore a sluice, which is now gone to decay. This sluice answered a valuable purpose in regulating the discharge of the wash waters, at particular times into the one hundred foot river; but in the place of the sluice a rude and barbarous contrivance at this time is resorted to, by forming a dam over the mouth of Wellmere lake drain, which remains for the purpose of preventing the regular overflowing

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overflowing of the lower part of the wash, with the tidal water, as also the descent of the land waters on the ebb tide into the one hundred foot river. This dam is annually made, and annually cut through, when the water within the wash accumulates to a certain height, above the water in the one hundred foot river. The dam being thus thrown down, gives a ready access to the tidal waters, over the whole surface of the lower part of the wash, thereby increasing its height by the sediment it leaves, and consequently reducing its capacity as a reservoir. At the time I made this survey, there was a head of about fifteen inches in the washway pressing upon the dam, above the low water in the one hundred foot river; and as the whole wash was then flooded above Mepal, little benefit could have accrued to the owners of that property long before that time.

The remedy I conceive to be as follows: Pointing doors, or flood-gates should be re-erected, and made small enough to be constantly kept open, winter and summer when the tide returns; and by the discharge of the wash and Wellmere lake waters, scour back the sediment that would be lodged in the eye or goole at every tide. If the doors and strings leading to them from the river (which by the bye will be very short) are disproportionably large for the quantity of water they will have to utter, they will of course silt up (as they did formerly, and indeed as most of the doors, through which there is not a navigation, now do) in summer; but in this case, as the strings of the goole will be very short and narrow, the silt may be easily removed whenever the water rises in Wellmere lake drain, sufficiently high to require a discharge into the one hundred foot river. Many more flakers or tunnels should be placed in the wash bank, particularly in the lower part of it, and that bank should be raised about two feet, and carried to a corresponding height, above a standard level in the one hundred foot river, from Wellmere lake sluice to Erith. The consequence of this improvement would be nearly similar to those I have anticipated from the inside wash bank, recommended to be erected against Moreton's leame. Great care ought to be taken in future; that by planting the staves with osiers, the best materials are not lost for repairing the prime bank, and also that the osiers do not produce a current against the counter shore, for this, with the gangs passing up and down, will wear away the foreland, and weaken the foundation of the prime bank, as is plainly the case now, and where it is much to be lamented, above Mepal.

Under the present system of draining, little, in my humble opinion, can be done, to serve the drainage of the country above Denver sluice, except cleansing out St. John Eau, and suffering that drain to act as a slaker to the Ouze, above Denver sluices, when the water rises in that river to a certain height, so as to press with a threatening and destructive head upon the country above. Then it is, that the inhabitants of that country implore relief, and it is at that time only that St. John's Eau is required by them to come in aid of the distresses, of which at this time they so justly complain, and which a timely and well regulated discharge of the highest waters of the south level through St. John's Eau, would completely afford. And this surely might be done without injury to navigation, or the consequences which generally attend the dividing of a stream; for as the twelve or eighteen inches of water, which would thus be conveyed through St. John's Eau, is the surface water only, and such as would go off in the first quarter's ebb, so its scouring powers would be but little felt between Denver sluices and the mouth of St. John's Eau below.

Thus have I collected together, in the best manner my leisure and ability will admit of, such observations on the nature and drainage of the fens, as came within my view, during the very short, time I have been engaged in the survey. According to the best of my judgment, the following conclusions are fairly to be drawn from them :

I. That the Eau-brink cut must have a tendency to improve the navigation of the Lynn ouze, and the drainage of the country, which properly belongs to it.

II. That its good effects cannot possibly extend to the complete and effectual relief of the middle and south levels of the fens ; and

III. That this relief is only to be obtained by following the laws of nature, and assisting her in the efforts she uniformly makes to relieve herself ; and where a complete and effectual drainage of the middle and south levels of the fens is yet to be obtained through the channel of Wisbeach.

CHARLES VANCOUVER.

Hoop-Inn, Cambridge,
Feb. 1, 1794.

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